

## Disclaimer

The following report(s) provides findings from an FDA-initiated query using Sentinel. While Sentinel queries may be undertaken to assess potential medical product safety risks, they may also be initiated for various other reasons. Some examples include determining a rate or count of an identified health outcome of interest, examining medical product use, exploring the feasibility of future, more detailed analyses within Sentinel, and seeking to better understand Sentinel capabilities.

Data obtained through Sentinel are intended to complement other types of evidence such as preclinical studies, clinical trials, postmarket studies, and adverse event reports, all of which are used by FDA to inform regulatory decisions regarding medical product safety. The information contained in this report is provided as part of FDA's commitment to place knowledge acquired from Sentinel in the public domain as soon as possible. Any public health actions taken by FDA regarding products involved in Sentinel queries will continue to be communicated through existing channels.

FDA wants to emphasize that the fact that FDA has initiated a query involving a medical product and is reporting findings related to that query does not mean that FDA is suggesting health care practitioners should change their prescribing practices for the medical product or that patients taking the medical product should stop using it. Patients who have questions about the use of an identified medical product should contact their health care practitioners.

The following report contains a description of the request, request specifications, and results from the modular program run(s).

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## Overview for Request: cder\_mpl2p\_wp033\_nsdp\_v01

**Request ID:** cder\_mpl2p\_wp033\_nsdp\_v01

**Request Description:** In this report we describe the association between race and COVID-19 outcomes before and after adjustment for baseline differences in demographic and clinical factors.

**Sentinel Routine Querying Module:** Cohort Identification and Descriptive Analysis (CIDA) module, version 11.3.0, with custom programming

**Data Source:** We distributed this query to six Sentinel Data Partners (DPs) in the Rapid COVID-19 Sentinel Distributed Database on July 11, 2022. These six Data Partners are a subset of the Sentinel Distributed Database that rapidly refresh to provide freshest feasible data and do not include patients with Medicare coverage. Our cohort selection period was from April 1, 2020, through March 31, 2021. Results from three DPs are included in this report. These are DP sites where crude and multivariable outcome regression models converged without any warnings when estimated in the population, including all ages. Please see Appendix A for a list of dates of available data for each Data Partner.

**Study Design:** We identified cohorts of individuals who had evidence of a COVID-19 infection and separately evaluated the occurrence of any hospitalization with COVID-19 and a hospitalization with COVID-19 without elements of Critical COVID-19 within 30 days of cohort entry. We also identified cohorts of individuals who were hospitalized with COVID-19 and separately evaluated the occurrence of hospitalization with Critical COVID-19, inpatient all-cause mortality, or any all-cause mortality within 30 days of cohort entry. We described all study cohorts at baseline by race, urbanicity, and outcome status. We evaluated crude and adjusted associations between race and COVID-19 outcomes using univariate and multivariable logistic regression models run at each Data Partner site. Effect estimates from participating sites were pooled at Sentinel Operations Center in a random-effects meta-analysis. This is a Level 2 Type 2 analysis in the Query Request Package (QRP) documentation.

**Cohort-defining Index Events:** We created study cohorts based on the following index-defining events:

**COVID-19 infection:** any eligible individual with evidence of an International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis code of U07.1 in any position on the discharge summary, in any care setting, or a positive result for a SARS-COV-2 PCR test between April 1, 2020, and March 31, 2021.

**Hospitalized with COVID-19:** any eligible individual with evidence of an inpatient encounter with ICD-10-CM diagnosis code of U07.1 in any position on the discharge summary.

Please see Appendices C - D for the ICD-10-CM diagnosis codes and laboratory codes used to identify cohort-defining index events.

**Cohort Eligibility Criteria:** Individuals were eligible for cohort entry if they were continuously enrolled in health plans with medical and drug coverage in the 183 days prior to cohort-defining index of interest including the index date. A gap in coverage of up to 45 days was allowed and treated as continuous enrollment. Individuals of all ages, male or female sex, were considered for cohort entry. The following age groups were included in the cohorts: 0 – 5, 6 – 11, 12 – 18, 19 – 29, 30 – 39, 40 – 49, 50 – 64, 65 – 74 and 75 years of age and older.

**Outcomes of Interest:** We evaluated the occurrence of the following binary outcomes separately within 30 days of cohort entry.

**In cohorts of individuals with evidence of COVID-19 infection:**

**In cohorts of individuals with COVID-19 infection:**

- Any hospitalization with COVID-19, defined as an inpatient encounter with ICD-10-CM diagnosis code of U07.1 in any position on the discharge summary.
- Hospitalization with COVID-19 without elements of Critical COVID-19, defined as an inpatient encounter with ICD-10-CM diagnosis code of U07.1 in any position on the discharge summary without any evidence of admission to the Intensive Care Unit (ICU), requiring Mechanical Ventilation (MV), Extra Corporeal Membrane Oxygenation (ECMO), or renal replacement therapy (RRT) with an accompanying diagnosis of renal failure, in the same inpatient encounter.

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- ICU admission, MV, ECMO and RRT events were defined using ICD-10-CM diagnosis codes; Revenue codes (RE); International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) codes; Healthcare Common Procedure Coding System (HCPCS) codes, Current Procedural Terminology, Fourth Edition (CPT-4), CPT Category III (CPT-3) and CPT Category II (CPT-2) procedure codes.

#### **In cohorts of individuals hospitalized with COVID-19:**

- Hospitalization with Critical COVID-19, defined as an inpatient encounter with ICD-10-CM diagnosis code of U07.1 in any position on the discharge summary with evidence of admission to the ICU or requiring MV, ECMO, or renal replacement therapy (RRT) with an accompanying diagnosis of renal failure, in the same inpatient encounter.
- All-cause mortality observed in an inpatient care setting, defined as a discharge disposition of "Expired" in an inpatient care setting recorded in the Encounter Table of the Sentinel Common Data Model (SCDM) v8.0.0.
- All-cause mortality observed in any care setting or data source, defined as either a discharge disposition of "Expired" in an inpatient care setting recorded in the Encounter Table or a death record in the Death Table of the SCDM v8.0.0

Please see Appendix E for the ICD-10-CM, RE, ICD-10-PCS, HCPCS, CPT-4, CPT-3 and CPT-2 codes used to identify outcomes of interest.

**Follow-up Time:** We set the follow-up time to truncate at 30 days after cohort entry for all cohort qualifying individuals. All cohort qualifying individuals were presumed to be observable for 30 days after cohort entry.

**Baseline Characteristics:** We assessed the following demographic characteristics on the day of cohort entry: age, sex, race, Hispanic ethnicity, month-year of cohort entry, census bureau region, urbanicity, proxies for socioeconomic status (SES) (median household income, median property value and percent unemployment) and data completeness for the SES proxies. We developed mapping files for urbanicity and SES proxies using information from the U.S. Census Bureau 2010 Census Urban Area data and the 2019 American Community Survey (ACS) respectively at the level of the zip code. We subsequently assigned an urbanicity category and SES values to an individual by matching on their zip code of residence.

We ascertained the following clinical characteristics for all cohort qualifying individuals in the 183 days prior to cohort entry date: adult BMI 19.9 or less, adult BMI 20-29, adult BMI: 30-39, adult BMI 40 or greater, alcohol or drug abuse, alcohol use/abuse, any cancer, asthma, autoimmune conditions, blood stem cell transplant, combined comorbidity score,<sup>1</sup> chronic kidney disease, chronic obstructive pulmonary disease (COPD), congestive heart failure, coronary artery disease, cystic fibrosis, diabetes mellitus, drug abuse/dependence, HIV, hypertension, interstitial lung disease, liver disease, neurologic conditions, obesity, pulmonary conditions, sickle cell disease, smoking, solid organ or stem cell transplant, solid organ transplant, and vascular disease.

We evaluated the following medications in the 183 days prior to the day of cohort entry: chemotherapy, inhaled glucocorticoids, non-systemic glucocorticoids (includes inhaled, ophthalmic, topical), ophthalmic glucocorticoids, systemic glucocorticoids, topical glucocorticoids, immune modulators and immunosuppressants. In addition, we evaluated the concurrent use of the following medications in the 30 days prior to and including the day of index: angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs) and vasopressors.

We collected COVID-related symptom information on the day prior to cohort entry through 14 days following cohort entry for the following clinical characteristics: abdominal pain or diarrhea, cough, dyspnea/shortness of breath, fever, headache, malaise/fatigue, multi-system inflammatory syndrome, myalgia, nasal congestion, nausea or vomiting, smell/taste disturbance and sore throat. We also evaluated the presence of a COVID-19 ICD-10-CM diagnostic code of U07.1 (not including positive lab results) in the seven days prior to cohort entry through seven days post-cohort entry and the components of the Critical COVID-19 outcome criteria (ICU admission, ECMO, MV and RRT) at cohort entry.

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Please see Appendices F and G for the ICD-10-CM, ICD-10-PCS, HCPCS, CPT-4, CPT-3 and CPT-2 codes used to identify baseline characteristics of interest. NDC codes were identified in the procedure table and dispensing table.

Please see Appendices H and I for methods used to create the mapping files for urbanicity and SES proxies.

**Association between Race and COVID-19 Outcomes:** The association between race and COVID-19 outcomes was determined at each Data Partner site using eight logistic regression models for each study outcome of interest. In these models, the binary study outcome was the dependent variable and race was the main independent variable. These models were specified as follows:

**Model 1:** Univariate model in the overall cohort

**Model 2:** Multivariable model in the overall cohort

- Dependent variable: Outcome
- Main independent variable: Race
- Controlled for: Age, combined comorbidity score<sup>1</sup>, sex, alcohol or drug abuse, asthma, autoimmune conditions, cancer, chronic kidney disease, chronic obstructive pulmonary disease (COPD), congestive heart failure, coronary artery disease, cystic fibrosis, diabetes mellitus, HIV, hypertension, interstitial lung disease, liver disease, neurological conditions, obesity, pulmonary conditions, sickle cell disease, smoking, solid organ or stem cell transplant, vascular disease, chemotherapy, immunosuppressants, immune modulators, non-systemic glucocorticoids, systemic glucocorticoids, angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs) and vasopressors

**Model 3\*\*\*:** Univariate model in the overall cohort, stratified by urbanicity

- Dependent variable: Outcome
- Main independent variable: Race
- Stratified by: Urbanicity

**Model 4\*\*\*:** Multivariable model in the overall cohort, stratified by urbanicity

- Dependent variable: Outcome
- Main independent variable: Race
- Controlled for: Age, combined comorbidity score<sup>1</sup>, sex, alcohol or drug abuse, asthma, autoimmune conditions, cancer, chronic kidney disease, chronic obstructive pulmonary disease (COPD), congestive heart failure, coronary artery disease, cystic fibrosis, diabetes mellitus, HIV, hypertension, interstitial lung disease, liver disease, neurological conditions, obesity, pulmonary conditions, sickle cell disease, smoking, solid organ or stem cell transplant, vascular disease, chemotherapy, immunosuppressants, immune modulators, non-systemic glucocorticoids, systemic glucocorticoids, angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs) and vasopressors

- Stratified by: Urbanicity

**Model 5:** Univariate model in a subset of individuals with non-missing indicators of socioeconomic status

**Model 6:** Multivariable model in a subset of individuals with non-missing indicators of socioeconomic status

- Dependent variable: Outcome
- Main independent variable: Race
- Controlled for: Median household income, median home value, percent unemployment, age, combined comorbidity score<sup>1</sup>, sex, alcohol or drug abuse, asthma, autoimmune conditions, cancer, chronic kidney disease, chronic obstructive pulmonary disease (COPD), congestive heart failure, coronary artery disease, cystic fibrosis, diabetes mellitus, HIV, hypertension, interstitial lung disease, liver disease, neurological conditions, obesity, pulmonary conditions, sickle cell disease, smoking, solid organ or stem cell transplant, vascular disease, chemotherapy, immunosuppressants, immune modulators, non-systemic glucocorticoids, systemic glucocorticoids, angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs) and vasopressors

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**Model 7\*\*\*:** Univariate model in a subset of individuals with non-missing indicators of socioeconomic status, stratified by urbanicity

- Dependent variable: Outcome
- Main independent variable: Race
- Stratified by: Urbanicity

**Model 8\*\*\*:** Multivariable model in a subset of individuals with non-missing indicators of socioeconomic status, stratified by urbanicity

- Dependent variable: Outcome
- Main independent variable: Race
- Controlled for: Median household income, median home value, percent unemployment, age, combined comorbidity score<sup>1</sup>, sex, alcohol or drug abuse, asthma, autoimmune conditions, cancer, chronic kidney disease, chronic obstructive pulmonary disease (COPD), congestive heart failure, coronary artery disease, cystic fibrosis, diabetes mellitus, HIV, hypertension, interstitial lung disease, liver disease, neurological conditions, obesity, pulmonary conditions, sickle cell disease, smoking, solid organ or stem cell transplant, vascular disease, chemotherapy, immunosuppressants, immune modulators, non-systemic glucocorticoids, systemic glucocorticoids, angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs) and vasopressors
- Stratified by: Urbanicity

Odds Ratios and 95% Confidence Intervals for the main independent variable, race, from each Data Partner were combined in a random-effects meta-analysis<sup>2</sup>. The association between race and COVID-19 outcomes was evaluated separately in populations of all ages and among those less than 65 years old.

Please see Appendices J - Q for the design diagram and specifications of parameters used in this request.

**Limitations:**

- All individuals in the Rapid COVID-19 Sentinel Distributed Database are assigned one value of race in the Sentinel Common Data Model, mostly according to self-report. A significant proportion of members in the rapidly refreshed Rapid COVID-19 Sentinel Distributed Database have unknown race. Unknown race is a heterogeneous category assigned to individuals with multiple race selections in source data, race selection in source data other than the listed categories in the Sentinel Common Data Model, or missing race.
- We set a fixed follow-up window of 30 days presuming observability for all cohort qualifying individuals.
- Measurement of socioeconomic status is at the level of Census Tract based on 2019 data from the American Community Survey which was in turn mapped to a zip code. SES was not measured at the level of the individual.
- Measurement of urbanicity is at the level of Census Tract based on data from Census 2010 which was in turn mapped to a zip code and may not represent the current urbanicity for a given zip code in the study period.
- Further, algorithms used to define events, outcomes, and characteristics may be imperfect and may result in misclassification. All data in this report should be interpreted with these limitations in mind.

**Notes:** Please contact the Sentinel Operations Center ([info@sentinelssystem.org](mailto:info@sentinelssystem.org)) for questions and to provide comments/suggestions for future enhancements to this document. For more information on Sentinel's routine querying modules, please refer to the documentation (<https://dev.sentinelssystem.org/projects/SENTINEL/repos/sentinel-routine-querying-tool-documentation/browse>).

<sup>1</sup> The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. *J Clin Epidemiol.* 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. *Med Care.* 2017;55(12):1046-1051)

<sup>2</sup>Hertzmark E, Spiegelman D. The SAS METAANAL Macro. Accessed May 21, 2022. [https://cdn1.sph.harvard.edu/wp-content/uploads/sites/271/2012/09/metaanal\\_user\\_manual\\_-\\_5-24-2012.pdf](https://cdn1.sph.harvard.edu/wp-content/uploads/sites/271/2012/09/metaanal_user_manual_-_5-24-2012.pdf)

\*\*\*Results not shown as these models contained warnings regarding model convergence

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**Glossary of Terms for Analyses Using  
Cohort Identification and Descriptive Analysis (CIDA) Module\***

**Amount Supplied** - number of units (pills, tablets, vials) dispensed. Net amount per NDC per dispensing.

**Blackout Period** - number of days at the beginning of a treatment episode that events are to be ignored. If an event occurs during the blackout period, the episode is excluded.

**Care Setting** - type of medical encounter or facility where the exposure, event, or condition code was recorded.

Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA). For laboratory results, possible care settings include: Emergency Department (E), Home (H), Inpatient (I), Outpatient (O), or Unknown or Missing (U). The Care Setting, along with the Principal Diagnosis Indicator (PDX), forms the Care Setting/PDX parameter.

**Ambulatory Visit (AV)** - includes visits at outpatient clinics, same-day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.

**Emergency Department (ED)** - includes ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits.

**Inpatient Hospital Stay (IP)** - includes all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.

**Non-Acute Institutional Stay (IS)** - includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.

**Other Ambulatory Visit (OA)** - includes other non overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.

**Charlson/Elixhauser Combined Comorbidity Score** - calculated based on comorbidities observed during a requester-defined window around the exposure episode start date (e.g., in the 183 days prior to index).

**Code Days** - the minimum number of times the diagnosis must be found during the evaluation period in order to fulfill the algorithm to identify the corresponding patient characteristic.

**Cohort Definition (drug/exposure)** - indicates how the cohort will be defined: 01: Cohort includes only the first valid treatment episode during the query period; 02: Cohort includes all valid treatment episodes during the query period; 03: Cohort includes all valid treatment episodes during the query period until an event occurs.

**Computed Start Marketing Date** - represents the first observed dispensing date among all valid users within a GROUP (scenario) within each Data Partner site.

**Days Supplied** - number of days supplied for all dispensings in qualifying treatment episodes.

**Eligible Members** - number of members eligible for an incident treatment episode (defined by the drug/exposure and event washout periods) with drug and medical coverage during the query period.

**Enrollment Gap** - number of days allowed between two consecutive enrollment periods without breaking a "continuously enrolled" sequence.

**Episodes** - treatment episodes; length of episode is determined by days supplied in one dispensing or consecutive dispensings bridged by the episode gap.

**Episode Gap** - number of days allowed between two (or more) consecutive exposures (dispensings/procedures) to be considered the same treatment episode.

**Event Deduplication** - specifies how events are counted by the Modular Program (MP) algorithm: 0: Counts all occurrences of a health outcome of interest (HOI) during an exposure episode; 1: de-duplicates occurrences of the same HOI code and code type on the same day; 2: de-duplicates occurrences of the same HOI group on the same day (e.g., de-duplicates at the group level).

**Exposure Episode Length** - number of days after exposure initiation that is considered "exposed time."

**Exposure Extension Period** - number of days post treatment period in which the outcomes/events are counted for a treatment episode. Extensions are added after any episode gaps have been bridged.

**Lookback Period** - number of days wherein a member is required to have evidence of pre-existing condition (diagnosis/procedure/drug dispensing).

**Maximum Episode Duration** - truncates exposure episodes after a requester-specified number of exposed days. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

**Member-Years** - sum of all days of enrollment with medical and drug coverage in the query period preceded by an exposure washout period all divided by 365.25.

**Minimum Days Supplied** - specifies a minimum number of days in length of the days supplied for the episode to be considered.

**Minimum Episode Duration** - specifies a minimum number of days in length of the episode for it to be considered. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

**Monitoring Period** - used to define time periods of interest for both sequential analysis and simple cohort characterization requests.

**Principal Diagnosis (PDX)** - diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. 'P' = principal diagnosis, 'S' = secondary diagnosis, 'X' = unspecified diagnosis, '.' = blank. Along with the Care Setting values, forms the Caresetting/PDX parameter.

**Query Period** - period in which the modular program looks for exposures and outcomes of interest.

**Switch Evaluation Step Value** - value used to differentiate evaluation step. Each switch pattern can support up to 2 evaluation steps (0 = switch pattern evaluation start; 1 = first evaluation; 2 = second evaluation).

**Switch Gap Inclusion Indicator** - indicator for whether gaps in treatment episodes that are included in a switch episode will be counted as part of the switch episode duration.

**Switch Pattern Cohort Inclusion Date** - indicates which date to use for inclusion into the switch pattern cohort of interest as well as optionally as the index date of the treatment episode initiating the switch pattern. Valid options are the product approval date, product marketing date, other requester defined date, or computed start marketing date.

**Switch Pattern Cohort Inclusion Strategy** - indicates how the switch pattern cohort inclusion date will be used: 01: used only as a switch cohort entry date. First treatment episode dispensing date is used as index for computing time to first switch; 02: used as switch cohort entry date and as initial switch step index date for computing time to first switch.

**Treatment Episode Truncation Indicator** - indicates whether the exposure episode will be truncated at the occurrence of a requester-specified code.

**Washout Period (drug/exposure)** - number of days a user is required to have no evidence of prior exposure (drug dispensing/procedure) and continuous drug and medical coverage prior to an incident treatment episode.

**Washout Period (event/outcome)** - number of days a user is required to have no evidence of a prior event (procedure/diagnosis) and continuous drug and medical coverage prior to an incident treatment episode.

**Years at Risk** - number of days supplied plus any episode gaps and exposure extension periods all divided by 365.25.

\*all terms may not be used in this report

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	841,628	N/A	16,783	N/A	80,325	N/A
<b>Demographic Characteristics</b>						
Age (years)	55.2	19.7	48.5	15.4	63.9	14.2
Age						
0-5 years	8,231	1.0%	137	0.8%	85	0.1%
6-11 years	12,438	1.5%	144	0.9%	146	0.2%
12-18 years	31,580	3.8%	351	2.1%	448	0.6%
19-29 years	89,419	10.6%	2,512	15.0%	3,021	3.8%
30-39 years	86,781	10.3%	3,428	20.4%	5,234	6.5%
40-49 years	90,333	10.7%	2,742	16.3%	6,181	7.7%
50-64 years	168,258	20.0%	3,046	18.1%	17,084	21.3%
65-74 years	193,277	23.0%	2,939	17.5%	29,167	36.3%
≥ 75 years	161,311	19.2%	1,484	8.8%	18,959	23.6%
Sex						
Female	454,938	54.1%	8,559	51.0%	48,828	60.8%
Male	386,690	45.9%	8,224	49.0%	31,497	39.2%
Race <sup>2</sup>						
American Indian or Alaska Native	2,853	0.3%	0	0.0%	0	0.0%
Asian	16,783	2.0%	16,783	100.0%	0	0.0%
Black or African American	80,325	9.5%	0	0.0%	80,325	100.0%
Native Hawaiian or Other Pacific Islander	4,353	0.5%	0	0.0%	0	0.0%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	2,853	N/A	4,353	N/A	382,674	N/A	354,640	N/A	486,988	N/A
<b>Demographic Characteristics</b>										
Age (years)	56.2	15.3	66.6	10.2	63.6	15.8	44.4	21.0	63.1	15.6
Age										
0-5 years	7	0.2%	5	0.1%	971	0.3%	7,026	2.0%	1,205	0.2%
6-11 years	12	0.4%	5	0.1%	1,561	0.4%	10,570	3.0%	1,868	0.4%
12-18 years	59	2.1%	20	0.5%	5,477	1.4%	25,225	7.1%	6,355	1.3%
19-29 years	257	9.0%	151	3.5%	22,846	6.0%	60,632	17.1%	28,787	5.9%
30-39 years	301	10.6%	175	4.0%	25,617	6.7%	52,026	14.7%	34,755	7.1%
40-49 years	389	13.6%	259	5.9%	27,779	7.3%	52,983	14.9%	37,350	7.7%
50-64 years	715	25.1%	580	13.3%	68,358	17.9%	78,475	22.1%	89,783	18.4%
65-74 years	660	23.1%	1,935	44.5%	117,733	30.8%	40,843	11.5%	152,434	31.3%
≥ 75 years	453	15.9%	1,223	28.1%	112,332	29.4%	26,860	7.6%	134,451	27.6%
Sex										
Female	1,640	57.5%	2,053	47.2%	207,119	54.1%	186,739	52.7%	268,199	55.1%
Male	1,213	42.5%	2,300	52.8%	175,555	45.9%	167,901	47.3%	218,789	44.9%
Race <sup>2</sup>										
American Indian or Alaska Native	2,853	100.0%	0	0.0%	0	0.0%	0	0.0%	2,853	0.6%
Asian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	16,783	3.4%
Black or African American	0	0.0%	0	0.0%	0	0.0%	0	0.0%	80,325	16.5%
Native Hawaiian or Other Pacific Islander	0	0.0%	4,353	100.0%	0	0.0%	0	0.0%	4,353	0.9%



**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unknown	354,640	42.1%	0	0.0%	0	0.0%
White	382,674	45.5%	0	0.0%	0	0.0%
Hispanic origin						
Yes	52,568	6.2%	1,559	9.3%	954	1.2%
No	283,161	33.6%	4,107	24.5%	52,857	65.8%
Unknown	505,899	60.1%	11,117	66.2%	26,514	33.0%
Month-Year of Cohort Entry						
April 2020	27,111	3.2%	836	5.0%	5,459	6.8%
May 2020	22,097	2.6%	543	3.2%	2,956	3.7%
June 2020	32,987	3.9%	674	4.0%	3,910	4.9%
July 2020	66,695	7.9%	1,225	7.3%	9,017	11.2%
August 2020	43,119	5.1%	834	5.0%	5,281	6.6%
September 2020	38,451	4.6%	668	4.0%	3,298	4.1%
October 2020	65,215	7.7%	1,023	6.1%	4,703	5.9%
November 2020	131,906	15.7%	2,483	14.8%	8,670	10.8%
December 2020	171,908	20.4%	3,392	20.2%	13,839	17.2%
January 2021	138,781	16.5%	2,817	16.8%	13,445	16.7%
February 2021	57,294	6.8%	1,265	7.5%	5,761	7.2%
March 2021	46,064	5.5%	1,023	6.1%	3,986	5.0%
Census Bureau (CB) Region						
Midwest	144,132	17.1%	1,439	8.6%	10,133	12.6%
Northeast	157,687	18.7%	4,488	26.7%	10,652	13.3%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unknown	0	0.0%	0	0.0%	0	0.0%	354,640	100.0%	0	0.0%
White	0	0.0%	0	0.0%	382,674	100.0%	0	0.0%	382,674	78.6%
Hispanic origin										
Yes	736	25.8%	165	3.8%	5,247	1.4%	43,907	12.4%	8,661	1.8%
No	1,341	47.0%	3,622	83.2%	220,287	57.6%	947	0.3%	282,214	58.0%
Unknown	776	27.2%	566	13.0%	157,140	41.1%	309,786	87.4%	196,113	40.3%
Month-Year of Cohort Entry										
April 2020	90	3.2%	149	3.4%	10,579	2.8%	9,998	2.8%	17,113	3.5%
May 2020	57	2.0%	120	2.8%	9,954	2.6%	8,467	2.4%	13,630	2.8%
June 2020	118	4.1%	165	3.8%	13,127	3.4%	14,993	4.2%	17,994	3.7%
July 2020	231	8.1%	399	9.2%	25,624	6.7%	30,199	8.5%	36,496	7.5%
August 2020	132	4.6%	244	5.6%	18,267	4.8%	18,361	5.2%	24,758	5.1%
September 2020	141	4.9%	178	4.1%	17,630	4.6%	16,536	4.7%	21,915	4.5%
October 2020	253	8.9%	297	6.8%	31,750	8.3%	27,189	7.7%	38,026	7.8%
November 2020	476	16.7%	642	14.7%	63,735	16.7%	55,900	15.8%	76,006	15.6%
December 2020	599	21.0%	852	19.6%	81,808	21.4%	71,418	20.1%	100,490	20.6%
January 2021	490	17.2%	808	18.6%	64,469	16.8%	56,752	16.0%	82,029	16.8%
February 2021	152	5.3%	304	7.0%	25,843	6.8%	23,969	6.8%	33,325	6.8%
March 2021	114	4.0%	195	4.5%	19,888	5.2%	20,858	5.9%	25,206	5.2%
Census Bureau (CB) Region										
Midwest	258	9.0%	708	16.3%	73,624	19.2%	57,970	16.3%	86,162	17.7%
Northeast	208	7.3%	383	8.8%	59,924	15.7%	82,032	23.1%	75,655	15.5%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
South	403,464	47.9%	5,011	29.9%	55,036	68.5%
West	134,564	16.0%	5,743	34.2%	4,452	5.5%
CB Region (Invalid)	561	0.1%	29	0.2%	33	0.0%
CB Region (Missing)	675	0.1%	36	0.2%	9	0.0%
CB Region (Other)	545	0.1%	37	0.2%	10	0.0%
Urbanicity						
Urban (population >= 50,000)	590,496	70.2%	15,521	92.5%	60,024	74.7%
Suburban (population 2,500 - 49,999)	8,156	1.0%	42	0.3%	966	1.2%
Rural (population < 2,500)	241,194	28.7%	1,118	6.7%	19,282	24.0%
Zip Code Unknown or Urbanicity Not Available	1,782	0.2%	102	0.6%	53	0.1%
Proxies for Socioeconomic Status						
Average Median Household	68,000.1	26,556.9	83,691.3	31,133.4	53,519.9	20,960.8
Average Median Home Value <sup>3</sup>	257,527.4	197,349.8	412,125.3	275,422.3	192,041.0	134,825.9
Average Percent Unemployment <sup>3</sup>	5.3	2.7	4.8	1.9	7.4	3.9
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	771,807	91.7%	14,531	86.6%	76,756	95.6%
Median Home Value Available	771,570	91.7%	14,519	86.5%	76,685	95.5%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
South	1,237	43.4%	1,882	43.2%	187,763	49.1%	152,535	43.0%	250,929	51.5%
West	1,147	40.2%	1,313	30.2%	60,871	15.9%	61,038	17.2%	73,526	15.1%
CB Region (Invalid)	1	0.0%	1	0.0%	309	0.1%	188	0.1%	373	0.1%
CB Region (Missing)	1	0.0%	2	0.0%	177	0.0%	450	0.1%	225	0.0%
CB Region (Other)	1	0.0%	64	1.5%	6	0.0%	427	0.1%	118	0.0%
Urbanicity										
Urban (population >= 50,000)	1,672	58.6%	3,408	78.3%	240,715	62.9%	269,156	75.9%	321,340	66.0%
Suburban (population 2,500 - 49,999)	25	0.9%	23	0.5%	4,307	1.1%	2,793	0.8%	5,363	1.1%
Rural (population < 2,500)	1,153	40.4%	855	19.6%	137,160	35.8%	81,626	23.0%	159,568	32.8%
Zip Code Unknown or Urbanicity Not Available	3	0.1%	67	1.5%	492	0.1%	1,065	0.3%	717	0.1%
Proxies for Socioeconomic Status										
Average Median Household	61,081.6	22,506.9	67,289.3	25,098.5	67,808.3	24,728.9	71,070.5	28,488.2	65,859.1	24,895.2
Average Median Home Value <sup>3</sup>	222,216.0	143,558.1	269,939.9	183,190.0	245,246.7	180,485.8	280,235.3	219,320.3	241,689.7	179,658.1
Average Percent Unemployment <sup>3</sup>	6.1	3.6	5.5	2.6	5.0	2.5	5.1	2.5	5.4	2.9
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	2,746	96.2%	4,171	95.8%	356,535	93.2%	317,068	89.4%	454,739	93.4%
Median Home Value Available	2,745	96.2%	4,164	95.7%	356,433	93.1%	317,024	89.4%	454,546	93.3%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Percent Unemployment Available	772,942	91.8%	14,534	86.6%	76,860	95.7%
All SES Indicators Available	770,924	91.6%	14,519	86.5%	76,638	95.4%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	6,271	0.7%	145	0.9%	899	1.1%
Adult BMI 20-29	76,667	9.1%	1,503	9.0%	9,357	11.6%
Adult BMI 30-39	83,949	10.0%	685	4.1%	13,592	16.9%
Adult BMI 40 or greater	34,973	4.2%	145	0.9%	7,300	9.1%
Alcohol or Drug Abuse	20,122	2.4%	119	0.7%	3,057	3.8%
Alcohol Use Abuse	12,763	1.5%	86	0.5%	1,873	2.3%
Any Cancer	51,856	6.2%	540	3.2%	7,689	9.6%
Asthma	50,991	6.1%	745	4.4%	7,834	9.8%
Autoimmune Conditions	22,663	2.7%	220	1.3%	4,089	5.1%
Blood Stem Cell Transplant	64	0.0%	2	0.0%	7	0.0%
Chronic Kidney Disease	111,502	13.2%	1,315	7.8%	20,984	26.1%
Congestive Heart Failure	65,171	7.7%	457	2.7%	12,851	16.0%
Chronic Obstructive Pulmonary Disease (COPD)	78,865	9.4%	525	3.1%	11,528	14.4%
Coronary Artery Disease	126,840	15.1%	1,304	7.8%	18,660	23.2%
Cystic Fibrosis	118	0.0%	2	0.0%	7	0.0%
Diabetes Mellitus	183,790	21.8%	3,141	18.7%	33,488	41.7%
Drug Abuse Dependence	9,183	1.1%	48	0.3%	1,510	1.9%
HIV	2,605	0.3%	38	0.2%	840	1.0%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Percent Unemployment Available	2,753	96.5%	4,174	95.9%	357,123	93.3%	317,498	89.5%	455,444	93.5%
All SES Indicators Available	2,740	96.0%	4,163	95.6%	356,084	93.1%	316,780	89.3%	454,144	93.3%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	13	0.5%	53	1.2%	3,643	1.0%	1,518	0.4%	4,753	1.0%
Adult BMI 20-29	173	6.1%	710	16.3%	41,458	10.8%	23,466	6.6%	53,201	10.9%
Adult BMI 30-39	263	9.2%	510	11.7%	43,565	11.4%	25,334	7.1%	58,615	12.0%
Adult BMI 40 or greater	133	4.7%	152	3.5%	17,071	4.5%	10,172	2.9%	24,801	5.1%
Alcohol or Drug Abuse	107	3.8%	118	2.7%	11,240	2.9%	5,481	1.5%	14,641	3.0%
Alcohol Use Abuse	72	2.5%	76	1.7%	7,176	1.9%	3,480	1.0%	9,283	1.9%
Any Cancer	157	5.5%	330	7.6%	30,996	8.1%	12,144	3.4%	39,712	8.2%
Asthma	250	8.8%	259	5.9%	24,597	6.4%	17,306	4.9%	33,685	6.9%
Autoimmune Conditions	103	3.6%	156	3.6%	12,417	3.2%	5,678	1.6%	16,985	3.5%
Blood Stem Cell Transplant	0	0.0%	1	0.0%	24	0.0%	30	0.0%	34	0.0%
Chronic Kidney Disease	390	13.7%	985	22.6%	65,784	17.2%	22,044	6.2%	89,458	18.4%
Congestive Heart Failure	181	6.3%	449	10.3%	39,974	10.4%	11,259	3.2%	53,912	11.1%
Chronic Obstructive Pulmonary Disease (COPD)	266	9.3%	434	10.0%	51,808	13.5%	14,304	4.0%	64,561	13.3%
Coronary Artery Disease	395	13.8%	1,021	23.5%	80,717	21.1%	24,743	7.0%	102,097	21.0%
Cystic Fibrosis	0	0.0%	0	0.0%	66	0.0%	43	0.0%	75	0.0%
Diabetes Mellitus	831	29.1%	1,785	41.0%	97,600	25.5%	46,945	13.2%	136,845	28.1%
Drug Abuse Dependence	48	1.7%	49	1.1%	4,994	1.3%	2,534	0.7%	6,649	1.4%
HIV	18	0.6%	11	0.3%	797	0.2%	901	0.3%	1,704	0.3%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hypertension	356,107	42.3%	4,790	28.5%	56,513	70.4%
Interstitial Lung Disease	9,233	1.1%	101	0.6%	1,267	1.6%
Liver Disease	33,090	3.9%	601	3.6%	4,016	5.0%
Neurologic Conditions	90,725	10.8%	661	3.9%	12,706	15.8%
Obesity	159,821	19.0%	1,258	7.5%	27,103	33.7%
Pulmonary Conditions	45,451	5.4%	502	3.0%	7,381	9.2%
Sickle Cell Disease	870	0.1%	5	0.0%	564	0.7%
Smoking	97,027	11.5%	690	4.1%	14,431	18.0%
Solid Organ or Stem Cell	644	0.1%	16	0.1%	125	0.2%
Solid Organ Transplant	580	0.1%	14	0.1%	118	0.1%
Vascular Disease	395,995	47.1%	5,283	31.5%	59,126	73.6%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	12,323	1.5%	154	0.9%	1,917	2.4%
Glucocorticoids Inhaled	46,355	5.5%	579	3.4%	6,136	7.6%
Glucocorticoids NonSystemic	98,245	11.7%	1,716	10.2%	12,301	15.3%
Glucocorticoids Ophthalmic	10,427	1.2%	181	1.1%	1,596	2.0%
Glucocorticoids Systemic	192,542	22.9%	2,318	13.8%	23,140	28.8%
Glucocorticoids Topical	47,825	5.7%	1,043	6.2%	5,564	6.9%
Immune Modulators	23,000	2.7%	325	1.9%	3,083	3.8%
Immunosuppressants	13,385	1.6%	173	1.0%	2,177	2.7%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Hypertension	1,238	43.4%	2,654	61.0%	201,929	52.8%	88,983	25.1%	267,124	54.9%
Interstitial Lung Disease	29	1.0%	76	1.7%	5,915	1.5%	1,845	0.5%	7,388	1.5%
Liver Disease	151	5.3%	288	6.6%	17,931	4.7%	10,103	2.8%	22,987	4.7%
Neurologic Conditions	299	10.5%	540	12.4%	57,988	15.2%	18,531	5.2%	72,194	14.8%
Obesity	574	20.1%	883	20.3%	80,661	21.1%	49,342	13.9%	110,479	22.7%
Pulmonary Conditions	186	6.5%	321	7.4%	27,082	7.1%	9,979	2.8%	35,472	7.3%
Sickle Cell Disease	2	0.1%	4	0.1%	45	0.0%	250	0.1%	620	0.1%
Smoking	381	13.4%	602	13.8%	59,776	15.6%	21,147	6.0%	75,880	15.6%
Solid Organ or Stem Cell	0	0.0%	6	0.1%	295	0.1%	202	0.1%	442	0.1%
Solid Organ Transplant	0	0.0%	5	0.1%	271	0.1%	172	0.0%	408	0.1%
Vascular Disease	1,346	47.2%	2,878	66.1%	225,506	58.9%	101,856	28.7%	294,139	60.4%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	47	1.6%	85	2.0%	6,982	1.8%	3,138	0.9%	9,185	1.9%
Glucocorticoids Inhaled	173	6.1%	200	4.6%	26,396	6.9%	12,871	3.6%	33,484	6.9%
Glucocorticoids NonSystemic	348	12.2%	611	14.0%	52,679	13.8%	30,590	8.6%	67,655	13.9%
Glucocorticoids Ophthalmic	39	1.4%	98	2.3%	5,730	1.5%	2,783	0.8%	7,644	1.6%
Glucocorticoids Systemic	724	25.4%	972	22.3%	104,483	27.3%	60,905	17.2%	131,637	27.0%
Glucocorticoids Topical	161	5.6%	361	8.3%	24,288	6.3%	16,408	4.6%	31,417	6.5%
Immune Modulators	74	2.6%	157	3.6%	13,033	3.4%	6,328	1.8%	16,672	3.4%
Immunosuppressants	64	2.2%	98	2.3%	7,176	1.9%	3,697	1.0%	9,688	2.0%



**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	52,106	6.2%	647	3.9%	6,324	7.9%
Angiotensin receptor blockers (ARBs)	47,339	5.6%	974	5.8%	7,657	9.5%
Vasopressors	2,343	0.3%	37	0.2%	426	0.5%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.3	0.5	1.6	2.1	3.0
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	170,838	20.3%	3,153	18.8%	18,072	22.5%
Diarrhea	32,923	3.9%	427	2.5%	4,400	5.5%
Dyspnea/Short of Breath	170,822	20.3%	2,739	16.3%	25,480	31.7%
Fever	101,366	12.0%	2,147	12.8%	12,194	15.2%
Headache	9,883	1.2%	181	1.1%	1,194	1.5%
Malaise or Fatigue	108,347	12.9%	1,577	9.4%	14,632	18.2%
Multisystem Inflammatory Syndrome	106	0.0%	0	0.0%	18	0.0%
Myalgia	21,536	2.6%	463	2.8%	1,979	2.5%
Nasal Congestion	21,064	2.5%	230	1.4%	1,368	1.7%
Nausea or Vomiting	37,557	4.5%	418	2.5%	4,983	6.2%
Smell or Taste Disturbance	17,387	2.1%	256	1.5%	1,461	1.8%
Sore Throat	29,710	3.5%	574	3.4%	1,546	1.9%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	236	8.3%	364	8.4%	29,060	7.6%	15,475	4.4%	36,631	7.5%
Angiotensin receptor blockers (ARBs)	187	6.6%	350	8.0%	24,481	6.4%	13,690	3.9%	33,649	6.9%
Vasopressors	3	0.1%	24	0.6%	1,307	0.3%	546	0.2%	1,797	0.4%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.2	1.7	2.7	1.6	2.6	0.6	1.7	1.6	2.6
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	567	19.9%	987	22.7%	81,985	21.4%	66,074	18.6%	104,764	21.5%
Diarrhea	128	4.5%	196	4.5%	18,052	4.7%	9,720	2.7%	23,203	4.8%
Dyspnea/Short of Breath	715	25.1%	1,250	28.7%	92,824	24.3%	47,814	13.5%	123,008	25.3%
Fever	335	11.7%	609	14.0%	46,946	12.3%	39,135	11.0%	62,231	12.8%
Headache	39	1.4%	57	1.3%	3,648	1.0%	4,764	1.3%	5,119	1.1%
Malaise or Fatigue	332	11.6%	666	15.3%	59,542	15.6%	31,598	8.9%	76,749	15.8%
Multisystem Inflammatory Syndrome	0	0.0%	0	0.0%	42	0.0%	46	0.0%	60	0.0%
Myalgia	86	3.0%	105	2.4%	9,108	2.4%	9,795	2.8%	11,741	2.4%
Nasal Congestion	60	2.1%	53	1.2%	9,061	2.4%	10,292	2.9%	10,772	2.2%
Nausea or Vomiting	156	5.5%	228	5.2%	20,097	5.3%	11,675	3.3%	25,882	5.3%
Smell or Taste Disturbance	56	2.0%	67	1.5%	6,385	1.7%	9,162	2.6%	8,225	1.7%
Sore Throat	91	3.2%	131	3.0%	11,219	2.9%	16,149	4.6%	13,561	2.8%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.5	11.7	6.1	9.5	11.1	15.4
Mean number of emergency room encounters	0.5	1.6	0.2	1.1	0.8	2.5
Mean number of inpatient hospital encounters	0.1	0.4	0.0	0.3	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.1	0.1	0.3
Mean number of other ambulatory encounters	1.5	5.6	0.8	3.9	2.4	7.6
Mean number of filled prescriptions	12.2	16.0	7.0	9.8	16.9	17.4
Mean number of generics dispensed	5.2	5.0	3.4	3.7	7.4	5.4
Mean number of unique drug classes dispensed	4.9	4.6	3.2	3.3	7.0	4.9
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	698,908	83.0%	13,457	80.2%	69,906	87.0%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory encounters	7.9	11.0	9.6	13.0	10.0	12.1	6.4	10.0	10.1	12.6
Mean number of emergency room encounters	0.7	2.3	0.5	1.4	0.6	1.8	0.3	1.2	0.6	1.9
Mean number of inpatient hospital encounters	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.3	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.3	0.1	0.3	0.0	0.2	0.1	0.3
Mean number of other ambulatory encounters	2.0	5.8	1.6	5.7	2.1	6.6	0.7	3.6	2.1	6.6
Mean number of filled prescriptions	13.6	17.1	13.6	14.1	15.3	17.8	8.0	12.8	15.2	17.5
Mean number of generics dispensed	5.5	5.3	6.4	4.8	6.4	5.3	3.5	4.3	6.5	5.3
Mean number of unique drug classes dispensed	5.1	4.8	6.0	4.4	6.0	4.9	3.3	4.0	6.1	4.9
<b>COVID Diagnosis (-7, 7)</b>										
Diagnosis Code for COVID-19	2,338	81.9%	3,756	86.3%	322,881	84.4%	286,570	80.8%	412,338	84.7%

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	93	0.0%	3	0.0%	15	0.0%
Intensive Care	45,948	5.5%	638	3.8%	9,147	11.4%
Mechanical Ventilation	15,720	1.9%	275	1.6%	3,365	4.2%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,654	0.3%	41	0.2%	982	1.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1a. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	0	0.0%	1	0.0%	26	0.0%	48	0.0%	45	0.0%
Intensive Care	144	5.0%	464	10.7%	25,990	6.8%	9,565	2.7%	36,383	7.5%
Mechanical Ventilation	50	1.8%	185	4.2%	8,745	2.3%	3,100	0.9%	12,620	2.6%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	4	0.1%	27	0.6%	1,094	0.3%	506	0.1%	2,148	0.4%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	133,773	N/A	1,984	N/A	23,583	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.6	13.1	67.5	12.9	71.1	11.6
Age						
0-5 years	78	0.1%	0	0.0%	0	0.0%
6-11 years	43	0.0%	0	0.0%	1	0.0%
12-18 years	187	0.1%	0	0.0%	8	0.0%
19-29 years	1,268	0.9%	27	1.4%	94	0.4%
30-39 years	2,723	2.0%	118	5.9%	364	1.5%
40-49 years	5,002	3.7%	138	7.0%	752	3.2%
50-64 years	21,935	16.4%	325	16.4%	4,233	17.9%
65-74 years	44,797	33.5%	747	37.7%	9,495	40.3%
≥ 75 years	57,740	43.2%	629	31.7%	8,636	36.6%
Sex						
Female	64,820	48.5%	850	42.8%	13,179	55.9%
Male	68,953	51.5%	1,134	57.2%	10,404	44.1%
Race <sup>2</sup>						
American Indian or Alaska Native	550	0.4%	0	0.0%	0	0.0%
Asian	1,984	1.5%	1,984	100.0%	0	0.0%
Black or African American	23,583	17.6%	0	0.0%	23,583	100.0%
Native Hawaiian or Other Pacific Islander	1,188	0.9%	0	0.0%	0	0.0%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	550	N/A	1,188	N/A	75,138	N/A	31,330	N/A	102,443	N/A
<b>Demographic Characteristics</b>										
Age (years)	68.8	11.6	72.9	8.9	74.5	11.1	65.3	16.7	73.5	11.4
Age										
0-5 years	0	0.0%	0	0.0%	8	0.0%	70	0.2%	8	0.0%
6-11 years	0	0.0%	0	0.0%	3	0.0%	39	0.1%	4	0.0%
12-18 years	0	0.0%	0	0.0%	24	0.0%	155	0.5%	32	0.0%
19-29 years	7	1.3%	3	0.3%	248	0.3%	889	2.8%	379	0.4%
30-39 years	10	1.8%	13	1.1%	612	0.8%	1,606	5.1%	1,117	1.1%
40-49 years	31	5.6%	25	2.1%	1,366	1.8%	2,690	8.6%	2,312	2.3%
50-64 years	115	20.9%	114	9.6%	9,238	12.3%	7,910	25.2%	14,025	13.7%
65-74 years	214	38.9%	517	43.5%	25,291	33.7%	8,533	27.2%	36,264	35.4%
≥ 75 years	173	31.5%	516	43.4%	38,348	51.0%	9,438	30.1%	48,302	47.2%
Sex										
Female	293	53.3%	444	37.4%	35,774	47.6%	14,280	45.6%	50,540	49.3%
Male	257	46.7%	744	62.6%	39,364	52.4%	17,050	54.4%	51,903	50.7%
Race <sup>2</sup>										
American Indian or Alaska Native	550	100.0%	0	0.0%	0	0.0%	0	0.0%	550	0.5%
Asian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1,984	1.9%
Black or African American	0	0.0%	0	0.0%	0	0.0%	0	0.0%	23,583	23.0%
Native Hawaiian or Other Pacific Islander	0	0.0%	1,188	100.0%	0	0.0%	0	0.0%	1,188	1.2%



**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unknown	31,330	23.4%	0	0.0%	0	0.0%
White	75,138	56.2%	0	0.0%	0	0.0%
Hispanic origin						
Yes	5,757	4.3%	86	4.3%	55	0.2%
No	78,836	58.9%	1,057	53.3%	18,561	78.7%
Unknown	49,180	36.8%	841	42.4%	4,967	21.1%
Month-Year of Cohort Entry						
April 2020	7,011	5.2%	175	8.8%	2,155	9.1%
May 2020	3,624	2.7%	59	3.0%	910	3.9%
June 2020	3,963	3.0%	74	3.7%	1,026	4.4%
July 2020	10,709	8.0%	131	6.6%	2,720	11.5%
August 2020	7,234	5.4%	74	3.7%	1,581	6.7%
September 2020	5,374	4.0%	47	2.4%	829	3.5%
October 2020	9,445	7.1%	99	5.0%	1,270	5.4%
November 2020	20,025	15.0%	272	13.7%	2,472	10.5%
December 2020	26,996	20.2%	394	19.9%	3,857	16.4%
January 2021	22,864	17.1%	375	18.9%	3,803	16.1%
February 2021	9,868	7.4%	164	8.3%	1,824	7.7%
March 2021	6,660	5.0%	120	6.0%	1,136	4.8%
Census Bureau (CB) Region						
Midwest	28,500	21.3%	271	13.7%	3,641	15.4%
Northeast	16,960	12.7%	345	17.4%	2,238	9.5%
South	72,471	54.2%	679	34.2%	16,841	71.4%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unknown	0	0.0%	0	0.0%	0	0.0%	31,330	100.0%	0	0.0%
White	0	0.0%	0	0.0%	75,138	100.0%	0	0.0%	75,138	73.3%
Hispanic origin										
Yes	54	9.8%	8	0.7%	263	0.4%	5,291	16.9%	466	0.5%
No	414	75.3%	1,121	94.4%	57,617	76.7%	66	0.2%	78,770	76.9%
Unknown	82	14.9%	59	5.0%	17,258	23.0%	25,973	82.9%	23,207	22.7%
Month-Year of Cohort Entry										
April 2020	23	4.2%	53	4.5%	3,091	4.1%	1,514	4.8%	5,497	5.4%
May 2020	17	3.1%	39	3.3%	1,850	2.5%	749	2.4%	2,875	2.8%
June 2020	15	2.7%	46	3.9%	1,903	2.5%	899	2.9%	3,064	3.0%
July 2020	33	6.0%	124	10.4%	5,025	6.7%	2,676	8.5%	8,033	7.8%
August 2020	24	4.4%	62	5.2%	3,806	5.1%	1,687	5.4%	5,547	5.4%
September 2020	17	3.1%	43	3.6%	3,108	4.1%	1,330	4.2%	4,044	3.9%
October 2020	44	8.0%	65	5.5%	5,723	7.6%	2,244	7.2%	7,201	7.0%
November 2020	85	15.5%	162	13.6%	12,104	16.1%	4,930	15.7%	15,095	14.7%
December 2020	121	22.0%	229	19.3%	16,073	21.4%	6,322	20.2%	20,674	20.2%
January 2021	123	22.4%	233	19.6%	13,346	17.8%	4,984	15.9%	17,880	17.5%
February 2021	32	5.8%	82	6.9%	5,551	7.4%	2,215	7.1%	7,653	7.5%
March 2021	16	2.9%	50	4.2%	3,558	4.7%	1,780	5.7%	4,880	4.8%
Census Bureau (CB) Region										
Midwest	55	10.0%	233	19.6%	16,703	22.2%	7,597	24.2%	20,903	20.4%
Northeast	17	3.1%	75	6.3%	7,775	10.3%	6,510	20.8%	10,450	10.2%
South	241	43.8%	529	44.5%	41,518	55.3%	12,663	40.4%	59,808	58.4%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
West	15,626	11.7%	681	34.3%	856	3.6%
CB Region (Invalid)	66	0.0%	1	0.1%	5	0.0%
CB Region (Missing)	46	0.0%	1	0.1%	2	0.0%
CB Region (Other)	104	0.1%	6	0.3%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	86,049	64.3%	1,827	92.1%	17,187	72.9%
Suburban (population 2,500 - 49,999)	1,598	1.2%	7	0.4%	295	1.3%
Rural (population < 2,500)	45,908	34.3%	142	7.2%	6,093	25.8%
Zip Code Unknown or Urbanicity Not Available	218	0.2%	8	0.4%	8	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,622.2	21,799.8	74,312.9	26,438.3	49,804.8	18,828.6
Average Median Home Value <sup>3</sup>	199,788.4	131,753.5	322,685.3	196,328.0	170,609.1	114,721.9
Average Percent Unemployment <sup>3</sup>	5.9	3.2	5.2	2.0	7.8	4.0
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,353	95.9%	1,844	92.9%	23,027	97.6%
Median Home Value Available	128,297	95.9%	1,844	92.9%	23,005	97.5%
Percent Unemployment Available	128,581	96.1%	1,844	92.9%	23,051	97.7%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
West	237	43.1%	332	27.9%	9,075	12.1%	4,445	14.2%	11,181	10.9%
CB Region (Invalid)	0	0.0%	1	0.1%	52	0.1%	7	0.0%	59	0.1%
CB Region (Missing)	0	0.0%	0	0.0%	14	0.0%	29	0.1%	17	0.0%
CB Region (Other)	0	0.0%	18	1.5%	1	0.0%	79	0.3%	25	0.0%
Urbanicity										
Urban (population >= 50,000)	238	43.3%	937	78.9%	43,538	57.9%	22,322	71.2%	63,727	62.2%
Suburban (population 2,500 - 49,999)	6	1.1%	5	0.4%	976	1.3%	309	1.0%	1,289	1.3%
Rural (population < 2,500)	306	55.6%	227	19.1%	30,557	40.7%	8,583	27.4%	37,325	36.4%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	19	1.6%	67	0.1%	116	0.4%	102	0.1%
Proxies for Socioeconomic Status (SES)										
Average Median Household Income <sup>3</sup>	52,975.7	18,449.9	64,793.0	23,512.0	61,370.9	21,145.8	62,002.9	22,964.5	58,911.8	21,378.7
Average Median Home Value <sup>3</sup>	170,308.7	106,561.8	253,677.7	175,058.4	198,423.0	122,405.3	216,654.6	151,086.3	194,758.1	124,794.5
Average Percent Unemployment <sup>3</sup>	7.2	4.8	5.6	2.6	5.3	2.7	5.6	3.0	5.9	3.2
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	542	98.5%	1,154	97.1%	72,277	96.2%	29,509	94.2%	98,844	96.5%
Median Home Value Available	543	98.7%	1,155	97.2%	72,259	96.2%	29,491	94.1%	98,806	96.4%
Percent Unemployment Available	545	99.1%	1,156	97.3%	72,429	96.4%	29,556	94.3%	99,025	96.7%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
All SES Indicators Available	128,167	95.8%	1,844	92.9%	22,995	97.5%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,971	1.5%	31	1.6%	416	1.8%
Adult BMI 20-29	16,905	12.6%	310	15.6%	3,178	13.5%
Adult BMI 30-39	21,226	15.9%	141	7.1%	4,555	19.3%
Adult BMI 40 or greater	10,665	8.0%	38	1.9%	2,688	11.4%
Alcohol or Drug Abuse	5,740	4.3%	20	1.0%	1,196	5.1%
Alcohol Use Abuse	3,622	2.7%	17	0.9%	745	3.2%
Any Cancer	16,462	12.3%	162	8.2%	3,166	13.4%
Asthma	11,819	8.8%	151	7.6%	2,650	11.2%
Autoimmune Conditions	6,218	4.6%	42	2.1%	1,452	6.2%
Blood Stem Cell Transplant	18	0.0%	0	0.0%	2	0.0%
Chronic Kidney Disease	44,858	33.5%	535	27.0%	10,032	42.5%
Congestive Heart Failure	29,504	22.1%	216	10.9%	6,459	27.4%
Chronic Obstructive Pulmonary Disease (COPD)	31,467	23.5%	201	10.1%	5,300	22.5%
Coronary Artery Disease	45,907	34.3%	487	24.5%	8,243	35.0%
Cystic Fibrosis	25	0.0%	0	0.0%	1	0.0%
Diabetes Mellitus	59,820	44.7%	934	47.1%	13,284	56.3%
Drug Abuse Dependence	2,639	2.0%	6	0.3%	583	2.5%
HIV	525	0.4%	5	0.3%	248	1.1%
Hypertension	100,360	75.0%	1,282	64.6%	20,205	85.7%
Interstitial Lung Disease	4,061	3.0%	41	2.1%	656	2.8%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
All SES Indicators Available	541	98.4%	1,154	97.1%	72,172	96.1%	29,461	94.0%	98,706	96.4%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	2	0.4%	25	2.1%	1,175	1.6%	322	1.0%	1,649	1.6%
Adult BMI 20-29	30	5.5%	226	19.0%	10,006	13.3%	3,155	10.1%	13,750	13.4%
Adult BMI 30-39	55	10.0%	150	12.6%	12,092	16.1%	4,233	13.5%	16,993	16.6%
Adult BMI 40 or greater	38	6.9%	47	4.0%	5,562	7.4%	2,292	7.3%	8,373	8.2%
Alcohol or Drug Abuse	31	5.6%	38	3.2%	3,351	4.5%	1,104	3.5%	4,636	4.5%
Alcohol Use Abuse	20	3.6%	22	1.9%	2,129	2.8%	689	2.2%	2,933	2.9%
Any Cancer	55	10.0%	117	9.8%	9,855	13.1%	3,107	9.9%	13,355	13.0%
Asthma	58	10.5%	85	7.2%	6,236	8.3%	2,639	8.4%	9,180	9.0%
Autoimmune Conditions	36	6.5%	56	4.7%	3,507	4.7%	1,125	3.6%	5,093	5.0%
Blood Stem Cell Transplant	0	0.0%	0	0.0%	10	0.0%	6	0.0%	12	0.0%
Chronic Kidney Disease	148	26.9%	431	36.3%	25,822	34.4%	7,890	25.2%	36,968	36.1%
Congestive Heart Failure	85	15.5%	214	18.0%	17,702	23.6%	4,828	15.4%	24,676	24.1%
Chronic Obstructive Pulmonary Disease (COPD)	105	19.1%	193	16.2%	20,649	27.5%	5,019	16.0%	26,448	25.8%
Coronary Artery Disease	141	25.6%	384	32.3%	28,719	38.2%	7,933	25.3%	37,974	37.1%
Cystic Fibrosis	0	0.0%	0	0.0%	18	0.0%	6	0.0%	19	0.0%
Diabetes Mellitus	287	52.2%	634	53.4%	32,545	43.3%	12,136	38.7%	47,684	46.5%
Drug Abuse Dependence	16	2.9%	18	1.5%	1,502	2.0%	514	1.6%	2,125	2.1%
HIV	0	0.0%	2	0.2%	146	0.2%	124	0.4%	401	0.4%
Hypertension	372	67.6%	893	75.2%	57,923	77.1%	19,685	62.8%	80,675	78.8%
Interstitial Lung Disease	16	2.9%	35	2.9%	2,550	3.4%	763	2.4%	3,298	3.2%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Liver Disease	9,595	7.2%	120	6.0%	1,613	6.8%
Neurologic Conditions	29,662	22.2%	221	11.1%	5,289	22.4%
Obesity	41,509	31.0%	285	14.4%	9,213	39.1%
Pulmonary Conditions	30,122	22.5%	362	18.2%	4,982	21.1%
Sickle Cell Disease	324	0.2%	2	0.1%	234	1.0%
Smoking	33,087	24.7%	218	11.0%	6,083	25.8%
Solid Organ or Stem Cell	258	0.2%	7	0.4%	63	0.3%
Solid Organ Transplant	240	0.2%	7	0.4%	61	0.3%
Vascular Disease	108,364	81.0%	1,368	69.0%	20,983	89.0%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,333	3.2%	46	2.3%	818	3.5%
Glucocorticoids Inhaled	14,855	11.1%	155	7.8%	2,470	10.5%
Glucocorticoids NonSystemic	25,166	18.8%	355	17.9%	4,282	18.2%
Glucocorticoids Ophthalmic	2,574	1.9%	47	2.4%	526	2.2%
Glucocorticoids Systemic	52,230	39.0%	582	29.3%	8,491	36.0%
Glucocorticoids Topical	9,855	7.4%	180	9.1%	1,646	7.0%
Immune Modulators	7,270	5.4%	104	5.2%	1,321	5.6%
Immunosuppressants	4,005	3.0%	49	2.5%	861	3.7%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	12,029	9.0%	140	7.1%	2,031	8.6%
Angiotensin receptor blockers (ARBs)	11,314	8.5%	226	11.4%	2,431	10.3%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Liver Disease	52	9.5%	103	8.7%	5,558	7.4%	2,149	6.9%	7,446	7.3%
Neurologic Conditions	96	17.5%	208	17.5%	18,712	24.9%	5,136	16.4%	24,526	23.9%
Obesity	142	25.8%	258	21.7%	22,741	30.3%	8,870	28.3%	32,639	31.9%
Pulmonary Conditions	135	24.5%	223	18.8%	17,213	22.9%	7,207	23.0%	22,915	22.4%
Sickle Cell Disease	1	0.2%	0	0.0%	14	0.0%	73	0.2%	251	0.2%
Smoking	130	23.6%	230	19.4%	20,931	27.9%	5,495	17.5%	27,592	26.9%
Solid Organ or Stem Cell	0	0.0%	4	0.3%	125	0.2%	59	0.2%	199	0.2%
Solid Organ Transplant	0	0.0%	4	0.3%	115	0.2%	53	0.2%	187	0.2%
Vascular Disease	407	74.0%	953	80.2%	62,977	83.8%	21,676	69.2%	86,688	84.6%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	14	2.5%	37	3.1%	2,501	3.3%	917	2.9%	3,416	3.3%
Glucocorticoids Inhaled	49	8.9%	83	7.0%	9,201	12.2%	2,897	9.2%	11,958	11.7%
Glucocorticoids NonSystemic	80	14.5%	198	16.7%	15,109	20.1%	5,142	16.4%	20,024	19.5%
Glucocorticoids Ophthalmic	8	1.5%	30	2.5%	1,448	1.9%	515	1.6%	2,059	2.0%
Glucocorticoids Systemic	208	37.8%	370	31.1%	31,083	41.4%	11,496	36.7%	40,734	39.8%
Glucocorticoids Topical	31	5.6%	110	9.3%	5,784	7.7%	2,104	6.7%	7,751	7.6%
Immune Modulators	31	5.6%	58	4.9%	4,107	5.5%	1,649	5.3%	5,621	5.5%
Immunosuppressants	23	4.2%	38	3.2%	2,194	2.9%	840	2.7%	3,165	3.1%
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	60	10.9%	106	8.9%	6,953	9.3%	2,739	8.7%	9,290	9.1%
Angiotensin receptor blockers (ARBs)	46	8.4%	114	9.6%	6,024	8.0%	2,473	7.9%	8,841	8.6%



**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Vasopressors	2,142	1.6%	45	2.3%	410	1.7%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	1.8	2.8	3.5	3.5
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	32,719	24.5%	562	28.3%	5,623	23.8%
Diarrhea	13,778	10.3%	184	9.3%	2,435	10.3%
Dyspnea/Short of Breath	101,121	75.6%	1,531	77.2%	17,456	74.0%
Fever	30,892	23.1%	572	28.8%	5,985	25.4%
Headache	1,630	1.2%	32	1.6%	327	1.4%
Malaise or Fatigue	44,610	33.3%	526	26.5%	8,169	34.6%
Multisystem Inflammatory Syndrome	93	0.1%	0	0.0%	19	0.1%
Myalgia	2,140	1.6%	37	1.9%	336	1.4%
Nasal Congestion	689	0.5%	5	0.3%	111	0.5%
Nausea or Vomiting	13,522	10.1%	138	7.0%	2,408	10.2%
Smell or Taste Disturbance	1,137	0.8%	17	0.9%	229	1.0%
Sore Throat	1,164	0.9%	24	1.2%	174	0.7%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	17.0	11.1	17.1	15.0	20.0
Mean number of emergency room encounters	1.3	2.8	0.8	2.1	1.5	3.4

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Vasopressors	6	1.1%	29	2.4%	1,180	1.6%	472	1.5%	1,670	1.6%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.4	3.1	2.7	3.3	3.2	3.4	2.3	3.1	3.2	3.4
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory encounters	11.0	14.6	12.3	16.9	14.0	15.9	12.4	16.9	14.1	16.9
Mean number of emergency room encounters	1.6	4.0	1.0	1.8	1.3	2.7	1.2	2.4	1.4	2.9
Cough	104	18.9%	319	26.9%	18,196	24.2%	7,915	25.3%	24,804	24.2%
Diarrhea	58	10.5%	102	8.6%	8,071	10.7%	2,928	9.3%	10,850	10.6%
Dyspnea/Short of Breath	430	78.2%	907	76.3%	57,531	76.6%	23,266	74.3%	77,855	76.0%
Fever	100	18.2%	287	24.2%	16,409	21.8%	7,539	24.1%	23,353	22.8%
Headache	6	1.1%	22	1.9%	806	1.1%	437	1.4%	1,193	1.2%
Malaise or Fatigue	141	25.6%	370	31.1%	26,895	35.8%	8,509	27.2%	36,101	35.2%
Multisystem Inflammatory Syndrome	0	0.0%	0	0.0%	30	0.0%	44	0.1%	49	0.0%
Myalgia	10	1.8%	20	1.7%	1,149	1.5%	588	1.9%	1,552	1.5%
Nasal Congestion	1	0.2%	4	0.3%	392	0.5%	176	0.6%	513	0.5%
Nausea or Vomiting	56	10.2%	99	8.3%	7,826	10.4%	2,995	9.6%	10,527	10.3%
Smell or Taste Disturbance	6	1.1%	15	1.3%	588	0.8%	282	0.9%	855	0.8%
Sore Throat	4	0.7%	10	0.8%	639	0.9%	313	1.0%	851	0.8%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of inpatient hospital encounters	0.3	0.8	0.1	0.5	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.5	0.0	0.3	0.1	0.5
Mean number of other ambulatory encounters	3.6	9.1	2.0	6.8	4.1	10.2
Mean number of filled prescriptions	20.9	20.3	14.6	14.5	21.7	19.9
Mean number of generics dispensed	8.9	6.0	7.1	4.9	9.4	5.9
Mean number of unique drug classes dispensed	8.3	5.5	6.6	4.4	8.8	5.3
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	133,773	100.0%	1,984	100.0%	23,583	100.0%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of inpatient hospital encounters	0.3	0.8	0.2	0.7	0.3	0.8	0.2	0.7	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.3	0.1	0.5	0.1	0.4	0.1	0.5
Mean number of other ambulatory encounters	3.6	8.2	2.7	7.7	4.0	9.6	2.4	6.9	4.0	9.7
Mean number of filled prescriptions	21.0	23.5	17.0	16.3	22.1	21.0	17.8	19.0	21.8	20.6
Mean number of generics dispensed	8.1	6.6	8.1	5.4	9.4	6.2	7.6	5.7	9.3	6.1
Mean number of unique drug classes dispensed	7.4	5.9	7.5	4.9	8.8	5.6	7.1	5.2	8.7	5.6
<b>COVID Diagnosis (-7, 7)</b>										
Diagnosis Code for COVID-19	550	100.0%	1,188	100.0%	75,138	100.0%	31,330	100.0%	102,443	100.0%

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	178	0.1%	10	0.5%	22	0.1%
Intensive Care	71,384	53.4%	1,089	54.9%	12,879	54.6%
Mechanical Ventilation	23,810	17.8%	431	21.7%	4,553	19.3%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,780	2.8%	59	3.0%	1,316	5.6%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1b. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Extracorporeal Membrane Oxygenation (ECMO)	0	0.0%	0	0.0%	50	0.1%	96	0.3%	82	0.1%
Intensive Care	271	49.3%	712	59.9%	39,785	52.9%	16,648	53.1%	54,736	53.4%
Mechanical Ventilation	96	17.5%	282	23.7%	13,269	17.7%	5,179	16.5%	18,631	18.2%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	6	1.1%	38	3.2%	1,602	2.1%	759	2.4%	3,021	2.9%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1c. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	841,628	N/A	129,802	N/A	711,826	N/A
<b>Demographic Characteristics</b>						
Age (years)	55.2	19.7	71.6	13.1	52.2	19.7
Age						
0-5 years	8,231	1.0%	72	0.1%	8,159	1.1%
6-11 years	12,438	1.5%	40	0.0%	12,398	1.7%
12-18 years	31,580	3.8%	165	0.1%	31,415	4.4%
19-29 years	89,419	10.6%	1,178	0.9%	88,241	12.4%
30-39 years	86,781	10.3%	2,586	2.0%	84,195	11.8%
40-49 years	90,333	10.7%	4,845	3.7%	85,488	12.0%
50-64 years	168,258	20.0%	21,298	16.4%	146,960	20.6%
65-74 years	193,277	23.0%	43,725	33.7%	149,552	21.0%
≥ 75 years	161,311	19.2%	55,893	43.1%	105,418	14.8%
Sex						
Female	454,938	54.1%	62,673	48.3%	392,265	55.1%
Male	386,690	45.9%	67,129	51.7%	319,561	44.9%
Race <sup>2</sup>						
American Indian or Alaska Native	2,853	0.3%	533	0.4%	2,320	0.3%
Asian	16,783	2.0%	1,923	1.5%	14,860	2.1%
Black or African American	80,325	9.5%	23,007	17.7%	57,318	8.1%
Native Hawaiian or Other Pacific Islander	4,353	0.5%	1,154	0.9%	3,199	0.4%
Unknown	354,640	42.1%	30,398	23.4%	324,242	45.6%
White	382,674	45.5%	72,787	56.1%	309,887	43.5%

**Table 1c. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	52,568	6.2%	5,569	4.3%	46,999	6.6%
No	283,161	33.6%	76,659	59.1%	206,502	29.0%
Unknown	505,899	60.1%	47,574	36.7%	458,325	64.4%
Month-Year of Cohort Entry						
April 2020	27,111	3.2%	7,267	5.6%	19,844	2.8%
May 2020	22,097	2.6%	3,426	2.6%	18,671	2.6%
June 2020	32,987	3.9%	4,243	3.3%	28,744	4.0%
July 2020	66,695	7.9%	10,684	8.2%	56,011	7.9%
August 2020	43,119	5.1%	6,738	5.2%	36,381	5.1%
September 2020	38,451	4.6%	5,285	4.1%	33,166	4.7%
October 2020	65,215	7.7%	9,738	7.5%	55,477	7.8%
November 2020	131,906	15.7%	20,458	15.8%	111,448	15.7%
December 2020	171,908	20.4%	26,620	20.5%	145,288	20.4%
January 2021	138,781	16.5%	21,015	16.2%	117,766	16.5%
February 2021	57,294	6.8%	8,538	6.6%	48,756	6.8%
March 2021	46,064	5.5%	5,790	4.5%	40,274	5.7%
Census Bureau (CB) Region						
Midwest	144,132	17.1%	27,709	21.3%	116,423	16.4%
Northeast	157,687	18.7%	16,283	12.5%	141,404	19.9%
South	403,464	47.9%	70,443	54.3%	333,021	46.8%
West	134,564	16.0%	15,159	11.7%	119,405	16.8%
CB Region (Invalid)	561	0.1%	62	0.0%	499	0.1%
CB Region (Missing)	675	0.1%	43	0.0%	632	0.1%



**Table 1c. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	545	0.1%	103	0.1%	442	0.1%
Urbanicity						
Urban (population >= 50,000)	590,496	70.2%	83,349	64.2%	507,147	71.2%
Suburban (population 2,500 - 49,999)	8,156	1.0%	1,551	1.2%	6,605	0.9%
Rural (population < 2,500)	241,194	28.7%	44,692	34.4%	196,502	27.6%
Zip Code Unknown or Urbanicity Not Available	1,782	0.2%	210	0.2%	1,572	0.2%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	68,000.1	26,556.9	59,577.3	21,749.3	69,621.8	27,243.1
Average Median Home Value <sup>3</sup>	257,527.4	197,349.8	199,388.5	130,960.7	268,720.9	206,703.1
Average Percent Unemployment <sup>3</sup>	5.3	2.7	5.9	3.2	5.2	2.7
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	771,807	91.7%	124,636	96.0%	647,171	90.9%
Median Home Value Available	771,570	91.7%	124,576	96.0%	646,994	90.9%
Percent Unemployment Available	772,942	91.8%	124,852	96.2%	648,090	91.0%
All SES Indicators Available	770,924	91.6%	124,455	95.9%	646,469	90.8%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	6,271	0.7%	1,799	1.4%	4,472	0.6%
Adult BMI 20-29	76,667	9.1%	16,208	12.5%	60,459	8.5%
Adult BMI 30-39	83,949	10.0%	20,299	15.6%	63,650	8.9%
Adult BMI 40 or greater	34,973	4.2%	10,010	7.7%	24,963	3.5%
Alcohol or Drug Abuse	20,122	2.4%	5,332	4.1%	14,790	2.1%
Alcohol Use Abuse	12,763	1.5%	3,378	2.6%	9,385	1.3%
Any Cancer	51,856	6.2%	15,726	12.1%	36,130	5.1%
Asthma	50,991	6.1%	10,689	8.2%	40,302	5.7%

**Table 1c. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	22,663	2.7%	5,921	4.6%	16,742	2.4%
Blood Stem Cell Transplant	64	0.0%	18	0.0%	46	0.0%
Chronic Kidney Disease	111,502	13.2%	42,327	32.6%	69,175	9.7%
Congestive Heart Failure	65,171	7.7%	27,409	21.1%	37,762	5.3%
Chronic Obstructive Pulmonary Disease (COPD)	78,865	9.4%	28,929	22.3%	49,936	7.0%
Coronary Artery Disease	126,840	15.1%	42,949	33.1%	83,891	11.8%
Cystic Fibrosis	118	0.0%	23	0.0%	95	0.0%
Diabetes Mellitus	183,790	21.8%	57,176	44.0%	126,614	17.8%
Drug Abuse Dependence	9,183	1.1%	2,435	1.9%	6,748	0.9%
HIV	2,605	0.3%	498	0.4%	2,107	0.3%
Hypertension	356,107	42.3%	95,245	73.4%	260,862	36.6%
Interstitial Lung Disease	9,233	1.1%	3,601	2.8%	5,632	0.8%
Liver Disease	33,090	3.9%	8,834	6.8%	24,256	3.4%
Neurologic Conditions	90,725	10.8%	27,589	21.3%	63,136	8.9%
Obesity	159,821	19.0%	39,515	30.4%	120,306	16.9%
Pulmonary Conditions	45,451	5.4%	17,790	13.7%	27,661	3.9%
Sickle Cell Disease	870	0.1%	303	0.2%	567	0.1%
Smoking	97,027	11.5%	29,516	22.7%	67,511	9.5%
Solid Organ or Stem Cell Transplant	644	0.1%	251	0.2%	393	0.1%
Solid Organ Transplant	580	0.1%	233	0.2%	347	0.0%
Vascular Disease	395,995	47.1%	102,708	79.1%	293,287	41.2%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	12,323	1.5%	4,187	3.2%	8,136	1.1%
Glucocorticoids Inhaled	46,355	5.5%	13,558	10.4%	32,797	4.6%

**Table 1c. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	98,245	11.7%	23,690	18.3%	74,555	10.5%
Glucocorticoids Ophthalmic	10,427	1.2%	2,520	1.9%	7,907	1.1%
Glucocorticoids Systemic	192,542	22.9%	44,090	34.0%	148,452	20.9%
Glucocorticoids Topical	47,825	5.7%	9,585	7.4%	38,240	5.4%
Immune Modulators	23,000	2.7%	7,010	5.4%	15,990	2.2%
Immunosuppressants	13,385	1.6%	3,893	3.0%	9,492	1.3%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	52,106	6.2%	11,858	9.1%	40,248	5.7%
Angiotensin receptor blockers (ARBs)	47,339	5.6%	11,220	8.6%	36,119	5.1%
Vasopressors	2,343	0.3%	1,475	1.1%	868	0.1%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.3	2.8	3.3	0.9	2.0
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	170,838	20.3%	40,337	31.1%	130,501	18.3%
Diarrhea	32,923	3.9%	14,648	11.3%	18,275	2.6%
Dyspnea/Short of Breath	170,822	20.3%	98,452	75.8%	72,370	10.2%
Fever	101,366	12.0%	35,351	27.2%	66,015	9.3%
Headache	9,883	1.2%	1,995	1.5%	7,888	1.1%
Malaise or Fatigue	108,347	12.9%	45,188	34.8%	63,159	8.9%
Multisystem Inflammatory Syndrome	106	0.0%	79	0.1%	27	0.0%
Myalgia	21,536	2.6%	3,440	2.7%	18,096	2.5%
Nasal Congestion	21,064	2.5%	1,508	1.2%	19,556	2.7%
Nausea or Vomiting	37,557	4.5%	14,670	11.3%	22,887	3.2%
Smell or Taste Disturbance	17,387	2.1%	1,520	1.2%	15,867	2.2%

**Table 1c. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sore Throat	29,710	3.5%	2,239	1.7%	27,471	3.9%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.5	11.7	13.1	16.8	7.7	10.3
Mean number of emergency room encounters	0.5	1.6	1.0	2.6	0.4	1.4
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.7	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.3	0.1	0.4	0.0	0.2
Mean number of other ambulatory encounters	1.5	5.6	3.4	8.9	1.2	4.7
Mean number of filled prescriptions	12.2	16.0	20.3	20.0	10.7	14.9
Mean number of generics dispensed	5.2	5.0	8.6	6.0	4.6	4.7
Mean number of unique drug classes dispensed	4.9	4.6	8.0	5.4	4.4	4.3
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	698,908	83.0%	127,816	98.5%	571,092	80.2%

**Table 1c. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	93	0.0%	92	0.1%	1	0.0%
Intensive Care	45,948	5.5%	44,624	34.4%	1,324	0.2%
Mechanical Ventilation	15,720	1.9%	15,364	11.8%	356	0.1%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,654	0.3%	2,600	2.0%	54	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1d. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	841,628	N/A	59,639	N/A	781,989	N/A
<b>Demographic Characteristics</b>						
Age (years)	55.2	19.7	71.3	13.9	54.0	19.7
Age						
0-5 years	8,231	1.0%	47	0.1%	8,184	1.0%
6-11 years	12,438	1.5%	26	0.0%	12,412	1.6%
12-18 years	31,580	3.8%	109	0.2%	31,471	4.0%
19-29 years	89,419	10.6%	774	1.3%	88,645	11.3%
30-39 years	86,781	10.3%	1,550	2.6%	85,231	10.9%
40-49 years	90,333	10.7%	2,402	4.0%	87,931	11.2%
50-64 years	168,258	20.0%	9,566	16.0%	158,692	20.3%
65-74 years	193,277	23.0%	19,308	32.4%	173,969	22.2%
≥ 75 years	161,311	19.2%	25,857	43.4%	135,454	17.3%
Sex						
Female	454,938	54.1%	30,831	51.7%	424,107	54.2%
Male	386,690	45.9%	28,808	48.3%	357,882	45.8%
Race <sup>2</sup>						
American Indian or Alaska Native	2,853	0.3%	263	0.4%	2,590	0.3%
Asian	16,783	2.0%	840	1.4%	15,943	2.0%
Black or African American	80,325	9.5%	10,211	17.1%	70,114	9.0%
Native Hawaiian or Other Pacific Islander	4,353	0.5%	459	0.8%	3,894	0.5%
Unknown	354,640	42.1%	14,045	23.6%	340,595	43.6%
White	382,674	45.5%	33,821	56.7%	348,853	44.6%

**Table 1d. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	52,568	6.2%	2,320	3.9%	50,248	6.4%
No	283,161	33.6%	35,103	58.9%	248,058	31.7%
Unknown	505,899	60.1%	22,216	37.3%	483,683	61.9%
Month-Year of Cohort Entry						
April 2020	27,111	3.2%	3,143	5.3%	23,968	3.1%
May 2020	22,097	2.6%	1,431	2.4%	20,666	2.6%
June 2020	32,987	3.9%	1,575	2.6%	31,412	4.0%
July 2020	66,695	7.9%	4,380	7.3%	62,315	8.0%
August 2020	43,119	5.1%	2,913	4.9%	40,206	5.1%
September 2020	38,451	4.6%	2,339	3.9%	36,112	4.6%
October 2020	65,215	7.7%	4,535	7.6%	60,680	7.8%
November 2020	131,906	15.7%	9,839	16.5%	122,067	15.6%
December 2020	171,908	20.4%	12,600	21.1%	159,308	20.4%
January 2021	138,781	16.5%	10,190	17.1%	128,591	16.4%
February 2021	57,294	6.8%	3,970	6.7%	53,324	6.8%
March 2021	46,064	5.5%	2,724	4.6%	43,340	5.5%
Census Bureau (CB) Region						
Midwest	144,132	17.1%	13,435	22.5%	130,697	16.7%
Northeast	157,687	18.7%	8,045	13.5%	149,642	19.1%
South	403,464	47.9%	31,355	52.6%	372,109	47.6%
West	134,564	16.0%	6,717	11.3%	127,847	16.3%
CB Region (Invalid)	561	0.1%	25	0.0%	536	0.1%
CB Region (Missing)	675	0.1%	27	0.0%	648	0.1%

**Table 1d. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	545	0.1%	35	0.1%	510	0.1%
Urbanicity						
Urban (population >= 50,000)	590,496	70.2%	36,561	61.3%	553,935	70.8%
Suburban (population 2,500 - 49,999)	8,156	1.0%	740	1.2%	7,416	0.9%
Rural (population < 2,500)	241,194	28.7%	22,250	37.3%	218,944	28.0%
Zip Code Unknown or Urbanicity Not Available	1,782	0.2%	88	0.1%	1,694	0.2%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	68,000.1	26,556.9	60,130.3	22,117.6	68,631.0	26,836.1
Average Median Home Value <sup>3</sup>	257,527.4	197,349.8	202,228.0	137,239.8	261,960.3	201,085.3
Average Percent Unemployment <sup>3</sup>	5.3	2.7	5.8	3.2	5.3	2.7
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	771,807	91.7%	57,291	96.1%	714,516	91.4%
Median Home Value Available	771,570	91.7%	57,267	96.0%	714,303	91.3%
Percent Unemployment Available	772,942	91.8%	57,399	96.2%	715,543	91.5%
All SES Indicators Available	770,924	91.6%	57,205	95.9%	713,719	91.3%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	6,271	0.7%	788	1.3%	5,483	0.7%
Adult BMI 20-29	76,667	9.1%	7,229	12.1%	69,438	8.9%
Adult BMI 30-39	83,949	10.0%	8,805	14.8%	75,144	9.6%
Adult BMI 40 or greater	34,973	4.2%	4,175	7.0%	30,798	3.9%
Alcohol or Drug Abuse	20,122	2.4%	2,236	3.7%	17,886	2.3%
Alcohol Use Abuse	12,763	1.5%	1,362	2.3%	11,401	1.5%
Any Cancer	51,856	6.2%	7,038	11.8%	44,818	5.7%
Asthma	50,991	6.1%	5,038	8.4%	45,953	5.9%



**Table 1d. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	22,663	2.7%	2,677	4.5%	19,986	2.6%
Blood Stem Cell Transplant	64	0.0%	8	0.0%	56	0.0%
Chronic Kidney Disease	111,502	13.2%	17,639	29.6%	93,863	12.0%
Congestive Heart Failure	65,171	7.7%	10,970	18.4%	54,201	6.9%
Chronic Obstructive Pulmonary Disease (COPD)	78,865	9.4%	12,232	20.5%	66,633	8.5%
Coronary Artery Disease	126,840	15.1%	17,981	30.1%	108,859	13.9%
Cystic Fibrosis	118	0.0%	13	0.0%	105	0.0%
Diabetes Mellitus	183,790	21.8%	24,539	41.1%	159,251	20.4%
Drug Abuse Dependence	9,183	1.1%	1,102	1.8%	8,081	1.0%
HIV	2,605	0.3%	213	0.4%	2,392	0.3%
Hypertension	356,107	42.3%	42,447	71.2%	313,660	40.1%
Interstitial Lung Disease	9,233	1.1%	1,368	2.3%	7,865	1.0%
Liver Disease	33,090	3.9%	3,809	6.4%	29,281	3.7%
Neurologic Conditions	90,725	10.8%	12,908	21.6%	77,817	10.0%
Obesity	159,821	19.0%	17,150	28.8%	142,671	18.2%
Pulmonary Conditions	45,451	5.4%	6,922	11.6%	38,529	4.9%
Sickle Cell Disease	870	0.1%	139	0.2%	731	0.1%
Smoking	97,027	11.5%	12,948	21.7%	84,079	10.8%
Solid Organ or Stem Cell Transplant	644	0.1%	102	0.2%	542	0.1%
Solid Organ Transplant	580	0.1%	94	0.2%	486	0.1%
Vascular Disease	395,995	47.1%	45,957	77.1%	350,038	44.8%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	12,323	1.5%	1,863	3.1%	10,460	1.3%
Glucocorticoids Inhaled	46,355	5.5%	5,929	9.9%	40,426	5.2%

**Table 1d. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	98,245	11.7%	10,510	17.6%	87,735	11.2%
Glucocorticoids Ophthalmic	10,427	1.2%	1,106	1.9%	9,321	1.2%
Glucocorticoids Systemic	192,542	22.9%	19,858	33.3%	172,684	22.1%
Glucocorticoids Topical	47,825	5.7%	4,278	7.2%	43,547	5.6%
Immune Modulators	23,000	2.7%	3,141	5.3%	19,859	2.5%
Immunosuppressants	13,385	1.6%	1,733	2.9%	11,652	1.5%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	52,106	6.2%	5,520	9.3%	46,586	6.0%
Angiotensin receptor blockers (ARBs)	47,339	5.6%	5,014	8.4%	42,325	5.4%
Vasopressors	2,343	0.3%	129	0.2%	2,214	0.3%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.3	2.6	3.2	1.1	2.2
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	170,838	20.3%	19,443	32.6%	151,395	19.4%
Diarrhea	32,923	3.9%	7,384	12.4%	25,539	3.3%
Dyspnea/Short of Breath	170,822	20.3%	42,824	71.8%	127,998	16.4%
Fever	101,366	12.0%	15,918	26.7%	85,448	10.9%
Headache	9,883	1.2%	918	1.5%	8,965	1.1%
Malaise or Fatigue	108,347	12.9%	21,824	36.6%	86,523	11.1%
Multisystem Inflammatory Syndrome	106	0.0%	27	0.0%	79	0.0%
Myalgia	21,536	2.6%	1,776	3.0%	19,760	2.5%
Nasal Congestion	21,064	2.5%	739	1.2%	20,325	2.6%
Nausea or Vomiting	37,557	4.5%	7,356	12.3%	30,201	3.9%
Smell or Taste Disturbance	17,387	2.1%	806	1.4%	16,581	2.1%

**Table 1d. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sore Throat	29,710	3.5%	1,114	1.9%	28,596	3.7%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.5	11.7	12.1	14.1	8.2	11.5
Mean number of emergency room encounters	0.5	1.6	1.0	2.5	0.4	1.6
Mean number of inpatient hospital encounters	0.1	0.4	0.2	0.7	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.3	0.1	0.4	0.0	0.3
Mean number of other ambulatory encounters	1.5	5.6	3.2	8.4	1.4	5.3
Mean number of filled prescriptions	12.2	16.0	19.7	19.5	11.6	15.6
Mean number of generics dispensed	5.2	5.0	8.3	5.8	5.0	4.9
Mean number of unique drug classes dispensed	4.9	4.6	7.8	5.3	4.7	4.5
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	698,908	83.0%	58,672	98.4%	640,236	81.9%

**Table 1d. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	93	0.0%	1	0.0%	92	0.0%
Intensive Care	45,948	5.5%	1,115	1.9%	44,833	5.7%
Mechanical Ventilation	15,720	1.9%	180	0.3%	15,540	2.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,654	0.3%	35	0.1%	2,619	0.3%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1e. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	133,773	N/A	77,349	N/A	56,424	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.6	13.1	72.1	12.3	71.0	14.2
Age						
0-5 years	78	0.1%	27	0.0%	51	0.1%
6-11 years	43	0.0%	16	0.0%	27	0.0%
12-18 years	187	0.1%	65	0.1%	122	0.2%
19-29 years	1,268	0.9%	438	0.6%	830	1.5%
30-39 years	2,723	2.0%	1,107	1.4%	1,616	2.9%
40-49 years	5,002	3.7%	2,638	3.4%	2,364	4.2%
50-64 years	21,935	16.4%	12,735	16.5%	9,200	16.3%
65-74 years	44,797	33.5%	26,698	34.5%	18,099	32.1%
≥ 75 years	57,740	43.2%	33,625	43.5%	24,115	42.7%
Sex						
Female	64,820	48.5%	35,124	45.4%	29,696	52.6%
Male	68,953	51.5%	42,225	54.6%	26,728	47.4%
Race <sup>2</sup>						
American Indian or Alaska Native	550	0.4%	305	0.4%	245	0.4%
Asian	1,984	1.5%	1,146	1.5%	838	1.5%
Black or African American	23,583	17.6%	14,137	18.3%	9,446	16.7%
Native Hawaiian or Other Pacific Islander	1,188	0.9%	750	1.0%	438	0.8%
Unknown	31,330	23.4%	17,658	22.8%	13,672	24.2%
White	75,138	56.2%	43,353	56.0%	31,785	56.3%

**Table 1e. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,757	4.3%	3,507	4.5%	2,250	4.0%
No	78,836	58.9%	46,393	60.0%	32,443	57.5%
Unknown	49,180	36.8%	27,449	35.5%	21,731	38.5%
Month-Year of Cohort Entry						
April 2020	7,011	5.2%	4,200	5.4%	2,811	5.0%
May 2020	3,624	2.7%	2,201	2.8%	1,423	2.5%
June 2020	3,963	3.0%	2,598	3.4%	1,365	2.4%
July 2020	10,709	8.0%	6,757	8.7%	3,952	7.0%
August 2020	7,234	5.4%	4,455	5.8%	2,779	4.9%
September 2020	5,374	4.0%	3,199	4.1%	2,175	3.9%
October 2020	9,445	7.1%	5,501	7.1%	3,944	7.0%
November 2020	20,025	15.0%	11,208	14.5%	8,817	15.6%
December 2020	26,996	20.2%	15,251	19.7%	11,745	20.8%
January 2021	22,864	17.1%	12,728	16.5%	10,136	18.0%
February 2021	9,868	7.4%	5,621	7.3%	4,247	7.5%
March 2021	6,660	5.0%	3,630	4.7%	3,030	5.4%
Census Bureau (CB) Region						
Midwest	28,500	21.3%	15,824	20.5%	12,676	22.5%
Northeast	16,960	12.7%	8,979	11.6%	7,981	14.1%
South	72,471	54.2%	43,222	55.9%	29,249	51.8%
West	15,626	11.7%	9,197	11.9%	6,429	11.4%
CB Region (Invalid)	66	0.0%	40	0.1%	26	0.0%
CB Region (Missing)	46	0.0%	17	0.0%	29	0.1%

**Table 1e. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	104	0.1%	70	0.1%	34	0.1%
Urbanicity						
Urban (population >= 50,000)	86,049	64.3%	51,189	66.2%	34,860	61.8%
Suburban (population 2,500 - 49,999)	1,598	1.2%	914	1.2%	684	1.2%
Rural (population < 2,500)	45,908	34.3%	25,118	32.5%	20,790	36.8%
Zip Code Unknown or Urbanicity Not Available	218	0.2%	128	0.2%	90	0.2%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,622.2	21,799.8	58,985.9	21,350.7	60,495.3	22,364.7
Average Median Home Value <sup>3</sup>	199,788.4	131,753.5	196,061.4	124,651.5	204,903.1	140,480.7
Average Percent Unemployment <sup>3</sup>	5.9	3.2	5.9	3.2	5.7	3.2
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,353	95.9%	74,253	96.0%	54,100	95.9%
Median Home Value Available	128,297	95.9%	74,211	95.9%	54,086	95.9%
Percent Unemployment Available	128,581	96.1%	74,376	96.2%	54,205	96.1%
All SES Indicators Available	128,167	95.8%	74,146	95.9%	54,021	95.7%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,971	1.5%	1,189	1.5%	782	1.4%
Adult BMI 20-29	16,905	12.6%	10,095	13.1%	6,810	12.1%
Adult BMI 30-39	21,226	15.9%	12,876	16.6%	8,350	14.8%
Adult BMI 40 or greater	10,665	8.0%	6,575	8.5%	4,090	7.2%
Alcohol or Drug Abuse	5,740	4.3%	3,589	4.6%	2,151	3.8%
Alcohol Use Abuse	3,622	2.7%	2,312	3.0%	1,310	2.3%
Any Cancer	16,462	12.3%	9,842	12.7%	6,620	11.7%
Asthma	11,819	8.8%	6,704	8.7%	5,115	9.1%

**Table 1e. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	6,218	4.6%	3,673	4.7%	2,545	4.5%
Blood Stem Cell Transplant	18	0.0%	11	0.0%	7	0.0%
Chronic Kidney Disease	44,858	33.5%	28,299	36.6%	16,559	29.3%
Congestive Heart Failure	29,504	22.1%	19,169	24.8%	10,335	18.3%
Chronic Obstructive Pulmonary Disease (COPD)	31,467	23.5%	19,640	25.4%	11,827	21.0%
Coronary Artery Disease	45,907	34.3%	28,802	37.2%	17,105	30.3%
Cystic Fibrosis	25	0.0%	12	0.0%	13	0.0%
Diabetes Mellitus	59,820	44.7%	36,729	47.5%	23,091	40.9%
Drug Abuse Dependence	2,639	2.0%	1,577	2.0%	1,062	1.9%
HIV	525	0.4%	321	0.4%	204	0.4%
Hypertension	100,360	75.0%	59,695	77.2%	40,665	72.1%
Interstitial Lung Disease	4,061	3.0%	2,703	3.5%	1,358	2.4%
Liver Disease	9,595	7.2%	5,863	7.6%	3,732	6.6%
Neurologic Conditions	29,662	22.2%	17,085	22.1%	12,577	22.3%
Obesity	41,509	31.0%	25,023	32.4%	16,486	29.2%
Pulmonary Conditions	30,122	22.5%	18,687	24.2%	11,435	20.3%
Sickle Cell Disease	324	0.2%	188	0.2%	136	0.2%
Smoking	33,087	24.7%	20,096	26.0%	12,991	23.0%
Solid Organ or Stem Cell Transplant	258	0.2%	173	0.2%	85	0.2%
Solid Organ Transplant	240	0.2%	162	0.2%	78	0.1%
Vascular Disease	108,364	81.0%	64,231	83.0%	44,133	78.2%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,333	3.2%	2,598	3.4%	1,735	3.1%
Glucocorticoids Inhaled	14,855	11.1%	9,009	11.6%	5,846	10.4%



**Table 1e. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	25,166	18.8%	15,094	19.5%	10,072	17.9%
Glucocorticoids Ophthalmic	2,574	1.9%	1,562	2.0%	1,012	1.8%
Glucocorticoids Systemic	52,230	39.0%	30,900	39.9%	21,330	37.8%
Glucocorticoids Topical	9,855	7.4%	5,860	7.6%	3,995	7.1%
Immune Modulators	7,270	5.4%	4,409	5.7%	2,861	5.1%
Immunosuppressants	4,005	3.0%	2,416	3.1%	1,589	2.8%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	12,029	9.0%	6,919	8.9%	5,110	9.1%
Angiotensin receptor blockers (ARBs)	11,314	8.5%	6,723	8.7%	4,591	8.1%
Vasopressors	2,142	1.6%	2,016	2.6%	126	0.2%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.3	3.5	2.7	3.2
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	32,719	24.5%	18,330	23.7%	14,389	25.5%
Diarrhea	13,778	10.3%	7,404	9.6%	6,374	11.3%
Dyspnea/Short of Breath	101,121	75.6%	61,673	79.7%	39,448	69.9%
Fever	30,892	23.1%	18,573	24.0%	12,319	21.8%
Headache	1,630	1.2%	929	1.2%	701	1.2%
Malaise or Fatigue	44,610	33.3%	25,355	32.8%	19,255	34.1%
Multisystem Inflammatory Syndrome	93	0.1%	61	0.1%	32	0.1%
Myalgia	2,140	1.6%	1,050	1.4%	1,090	1.9%
Nasal Congestion	689	0.5%	371	0.5%	318	0.6%
Nausea or Vomiting	13,522	10.1%	7,378	9.5%	6,144	10.9%
Smell or Taste Disturbance	1,137	0.8%	561	0.7%	576	1.0%

**Table 1e. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sore Throat	1,164	0.9%	615	0.8%	549	1.0%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	17.0	14.7	18.9	12.5	13.9
Mean number of emergency room encounters	1.3	2.8	1.4	2.9	1.3	2.6
Mean number of inpatient hospital encounters	0.3	0.8	0.3	0.8	0.2	0.7
Mean number of non-acute institutional encounters	0.1	0.5	0.1	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.6	9.1	3.8	9.5	3.3	8.5
Mean number of filled prescriptions	20.9	20.3	21.5	20.8	19.9	19.7
Mean number of generics dispensed	8.9	6.0	9.2	6.1	8.5	5.9
Mean number of unique drug classes dispensed	8.3	5.5	8.6	5.6	8.0	5.3
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	133,773	100.0%	77,349	100.0%	56,424	100.0%

**Table 1e. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	178	0.1%	178	0.2%	0	0.0%
Intensive Care	71,384	53.4%	71,384	92.3%	0	0.0%
Mechanical Ventilation	23,810	17.8%	23,810	30.8%	0	0.0%
Renal Replacement Therapy and Acute Renal Failure	3,780	2.8%	3,780	4.9%	0	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1f. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	133,773	N/A	19,002	N/A	114,771	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.6	13.1	76.6	10.0	70.8	13.4
Age						
0-5 years	78	0.1%	1	0.0%	77	0.1%
6-11 years	43	0.0%	0	0.0%	43	0.0%
12-18 years	187	0.1%	1	0.0%	186	0.2%
19-29 years	1,268	0.9%	10	0.1%	1,258	1.1%
30-39 years	2,723	2.0%	47	0.2%	2,676	2.3%
40-49 years	5,002	3.7%	205	1.1%	4,797	4.2%
50-64 years	21,935	16.4%	1,721	9.1%	20,214	17.6%
65-74 years	44,797	33.5%	6,051	31.8%	38,746	33.8%
≥ 75 years	57,740	43.2%	10,966	57.7%	46,774	40.8%
Sex						
Female	64,820	48.5%	7,748	40.8%	57,072	49.7%
Male	68,953	51.5%	11,254	59.2%	57,699	50.3%
Race <sup>2</sup>						
American Indian or Alaska Native	550	0.4%	93	0.5%	457	0.4%
Asian	1,984	1.5%	285	1.5%	1,699	1.5%
Black or African American	23,583	17.6%	3,356	17.7%	20,227	17.6%
Native Hawaiian or Other Pacific Islander	1,188	0.9%	207	1.1%	981	0.9%
Unknown	31,330	23.4%	3,636	19.1%	27,694	24.1%
White	75,138	56.2%	11,425	60.1%	63,713	55.5%

**Table 1f. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,757	4.3%	741	3.9%	5,016	4.4%
No	78,836	58.9%	12,208	64.2%	66,628	58.1%
Unknown	49,180	36.8%	6,053	31.9%	43,127	37.6%
Month-Year of Cohort Entry						
April 2020	7,011	5.2%	1,436	7.6%	5,575	4.9%
May 2020	3,624	2.7%	545	2.9%	3,079	2.7%
June 2020	3,963	3.0%	520	2.7%	3,443	3.0%
July 2020	10,709	8.0%	1,565	8.2%	9,144	8.0%
August 2020	7,234	5.4%	986	5.2%	6,248	5.4%
September 2020	5,374	4.0%	734	3.9%	4,640	4.0%
October 2020	9,445	7.1%	1,258	6.6%	8,187	7.1%
November 2020	20,025	15.0%	2,928	15.4%	17,097	14.9%
December 2020	26,996	20.2%	4,071	21.4%	22,925	20.0%
January 2021	22,864	17.1%	3,276	17.2%	19,588	17.1%
February 2021	9,868	7.4%	1,256	6.6%	8,612	7.5%
March 2021	6,660	5.0%	427	2.2%	6,233	5.4%
Census Bureau (CB) Region						
Midwest	28,500	21.3%	4,059	21.4%	24,441	21.3%
Northeast	16,960	12.7%	2,458	12.9%	14,502	12.6%
South	72,471	54.2%	10,264	54.0%	62,207	54.2%
West	15,626	11.7%	2,204	11.6%	13,422	11.7%
CB Region (Invalid)	66	0.0%	13	0.1%	53	0.0%
CB Region (Missing)	46	0.0%	2	0.0%	44	0.0%

**Table 1f. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	104	0.1%	2	0.0%	102	0.1%
Urbanicity						
Urban (population >= 50,000)	86,049	64.3%	11,816	62.2%	74,233	64.7%
Suburban (population 2,500 - 49,999)	1,598	1.2%	222	1.2%	1,376	1.2%
Rural (population < 2,500)	45,908	34.3%	6,947	36.6%	38,961	33.9%
Zip Code Unknown or Urbanicity Not Available	218	0.2%	17	0.1%	201	0.2%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,622.2	21,799.8	57,853.1	20,972.4	59,917.4	21,925.5
Average Median Home Value <sup>3</sup>	199,788.4	131,753.5	193,204.9	131,186.2	200,887.1	131,835.1
Average Percent Unemployment <sup>3</sup>	5.9	3.2	6.0	3.2	5.8	3.2
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,353	95.9%	18,355	96.6%	109,998	95.8%
Median Home Value Available	128,297	95.9%	18,349	96.6%	109,948	95.8%
Percent Unemployment Available	128,581	96.1%	18,388	96.8%	110,193	96.0%
All SES Indicators Available	128,167	95.8%	18,332	96.5%	109,835	95.7%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,971	1.5%	377	2.0%	1,594	1.4%
Adult BMI 20-29	16,905	12.6%	2,584	13.6%	14,321	12.5%
Adult BMI 30-39	21,226	15.9%	3,196	16.8%	18,030	15.7%
Adult BMI 40 or greater	10,665	8.0%	1,429	7.5%	9,236	8.0%
Alcohol or Drug Abuse	5,740	4.3%	835	4.4%	4,905	4.3%
Alcohol Use Abuse	3,622	2.7%	596	3.1%	3,026	2.6%
Any Cancer	16,462	12.3%	2,864	15.1%	13,598	11.8%
Asthma	11,819	8.8%	1,415	7.4%	10,404	9.1%

**Table 1f. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	6,218	4.6%	908	4.8%	5,310	4.6%
Blood Stem Cell Transplant	18	0.0%	4	0.0%	14	0.0%
Chronic Kidney Disease	44,858	33.5%	8,203	43.2%	36,655	31.9%
Congestive Heart Failure	29,504	22.1%	5,711	30.1%	23,793	20.7%
Chronic Obstructive Pulmonary Disease (COPD)	31,467	23.5%	5,342	28.1%	26,125	22.8%
Coronary Artery Disease	45,907	34.3%	8,179	43.0%	37,728	32.9%
Cystic Fibrosis	25	0.0%	3	0.0%	22	0.0%
Diabetes Mellitus	59,820	44.7%	9,625	50.7%	50,195	43.7%
Drug Abuse Dependence	2,639	2.0%	289	1.5%	2,350	2.0%
HIV	525	0.4%	62	0.3%	463	0.4%
Hypertension	100,360	75.0%	15,582	82.0%	84,778	73.9%
Interstitial Lung Disease	4,061	3.0%	885	4.7%	3,176	2.8%
Liver Disease	9,595	7.2%	1,551	8.2%	8,044	7.0%
Neurologic Conditions	29,662	22.2%	5,131	27.0%	24,531	21.4%
Obesity	41,509	31.0%	5,970	31.4%	35,539	31.0%
Pulmonary Conditions	30,122	22.5%	5,009	26.4%	25,113	21.9%
Sickle Cell Disease	324	0.2%	37	0.2%	287	0.3%
Smoking	33,087	24.7%	5,396	28.4%	27,691	24.1%
Solid Organ or Stem Cell Transplant	258	0.2%	35	0.2%	223	0.2%
Solid Organ Transplant	240	0.2%	31	0.2%	209	0.2%
Vascular Disease	108,364	81.0%	16,698	87.9%	91,666	79.9%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,333	3.2%	766	4.0%	3,567	3.1%
Glucocorticoids Inhaled	14,855	11.1%	2,231	11.7%	12,624	11.0%

**Table 1f. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	25,166	18.8%	3,859	20.3%	21,307	18.6%
Glucocorticoids Ophthalmic	2,574	1.9%	425	2.2%	2,149	1.9%
Glucocorticoids Systemic	52,230	39.0%	7,756	40.8%	44,474	38.8%
Glucocorticoids Topical	9,855	7.4%	1,546	8.1%	8,309	7.2%
Immune Modulators	7,270	5.4%	1,291	6.8%	5,979	5.2%
Immunosuppressants	4,005	3.0%	637	3.4%	3,368	2.9%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	12,029	9.0%	1,720	9.1%	10,309	9.0%
Angiotensin receptor blockers (ARBs)	11,314	8.5%	1,623	8.5%	9,691	8.4%
Vasopressors	2,142	1.6%	1,151	6.1%	991	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.9	3.7	2.9	3.3
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	32,719	24.5%	3,879	20.4%	28,840	25.1%
Diarrhea	13,778	10.3%	1,445	7.6%	12,333	10.7%
Dyspnea/Short of Breath	101,121	75.6%	16,012	84.3%	85,109	74.2%
Fever	30,892	23.1%	4,408	23.2%	26,484	23.1%
Headache	1,630	1.2%	158	0.8%	1,472	1.3%
Malaise or Fatigue	44,610	33.3%	5,549	29.2%	39,061	34.0%
Multisystem Inflammatory Syndrome	93	0.1%	8	0.0%	85	0.1%
Myalgia	2,140	1.6%	152	0.8%	1,988	1.7%
Nasal Congestion	689	0.5%	59	0.3%	630	0.5%
Nausea or Vomiting	13,522	10.1%	1,310	6.9%	12,212	10.6%



**Table 1f. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Smell or Taste Disturbance	1,137	0.8%	76	0.4%	1,061	0.9%
Sore Throat	1,164	0.9%	103	0.5%	1,061	0.9%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	17.0	15.6	18.9	13.4	16.6
Mean number of emergency room encounters	1.3	2.8	1.4	2.9	1.3	2.8
Mean number of inpatient hospital encounters	0.3	0.8	0.4	0.8	0.3	0.7
Mean number of non-acute institutional encounters	0.1	0.5	0.2	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.6	9.1	4.3	9.9	3.5	9.0
Mean number of filled prescriptions	20.9	20.3	23.7	22.6	20.4	19.9
Mean number of generics dispensed	8.9	6.0	9.7	6.1	8.8	6.0
Mean number of unique drug classes dispensed	8.3	5.5	9.1	5.5	8.2	5.5
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	133,773	100.0%	19,002	100.0%	114,771	100.0%

**Table 1f. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	178	0.1%	51	0.3%	127	0.1%
Intensive Care	71,384	53.4%	15,688	82.6%	55,696	48.5%
Mechanical Ventilation	23,810	17.8%	11,867	62.5%	11,943	10.4%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,780	2.8%	1,297	6.8%	2,483	2.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1g. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	133,773	N/A	19,474	N/A	114,299	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.6	13.1	76.7	10.0	70.7	13.4
Age						
0-5 years	78	0.1%	1	0.0%	77	0.1%
6-11 years	43	0.0%	0	0.0%	43	0.0%
12-18 years	187	0.1%	1	0.0%	186	0.2%
19-29 years	1,268	0.9%	10	0.1%	1,258	1.1%
30-39 years	2,723	2.0%	47	0.2%	2,676	2.3%
40-49 years	5,002	3.7%	206	1.1%	4,796	4.2%
50-64 years	21,935	16.4%	1,740	8.9%	20,195	17.7%
65-74 years	44,797	33.5%	6,128	31.5%	38,669	33.8%
≥ 75 years	57,740	43.2%	11,341	58.2%	46,399	40.6%
Sex						
Female	64,820	48.5%	7,959	40.9%	56,861	49.7%
Male	68,953	51.5%	11,515	59.1%	57,438	50.3%
Race <sup>2</sup>						
American Indian or Alaska Native	550	0.4%	94	0.5%	456	0.4%
Asian	1,984	1.5%	290	1.5%	1,694	1.5%
Black or African American	23,583	17.6%	3,405	17.5%	20,178	17.7%
Native Hawaiian or Other Pacific Islander	1,188	0.9%	210	1.1%	978	0.9%
Unknown	31,330	23.4%	3,709	19.0%	27,621	24.2%
White	75,138	56.2%	11,766	60.4%	63,372	55.4%

**Table 1g. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,757	4.3%	760	3.9%	4,997	4.4%
No	78,836	58.9%	12,537	64.4%	66,299	58.0%
Unknown	49,180	36.8%	6,177	31.7%	43,003	37.6%
Month-Year of Cohort Entry						
April 2020	7,011	5.2%	1,469	7.5%	5,542	4.8%
May 2020	3,624	2.7%	571	2.9%	3,053	2.7%
June 2020	3,963	3.0%	528	2.7%	3,435	3.0%
July 2020	10,709	8.0%	1,586	8.1%	9,123	8.0%
August 2020	7,234	5.4%	1,004	5.2%	6,230	5.5%
September 2020	5,374	4.0%	751	3.9%	4,623	4.0%
October 2020	9,445	7.1%	1,290	6.6%	8,155	7.1%
November 2020	20,025	15.0%	3,023	15.5%	17,002	14.9%
December 2020	26,996	20.2%	4,174	21.4%	22,822	20.0%
January 2021	22,864	17.1%	3,364	17.3%	19,500	17.1%
February 2021	9,868	7.4%	1,283	6.6%	8,585	7.5%
March 2021	6,660	5.0%	431	2.2%	6,229	5.4%
Census Bureau (CB) Region						
Midwest	28,500	21.3%	4,164	21.4%	24,336	21.3%
Northeast	16,960	12.7%	2,525	13.0%	14,435	12.6%
South	72,471	54.2%	10,444	53.6%	62,027	54.3%
West	15,626	11.7%	2,323	11.9%	13,303	11.6%
CB Region (Invalid)	66	0.0%	14	0.1%	52	0.0%
CB Region (Missing)	46	0.0%	2	0.0%	44	0.0%

**Table 1g. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	104	0.1%	2	0.0%	102	0.1%
Urbanicity						
Urban (population >= 50,000)	86,049	64.3%	12,126	62.3%	73,923	64.7%
Suburban (population 2,500 - 49,999)	1,598	1.2%	230	1.2%	1,368	1.2%
Rural (population < 2,500)	45,908	34.3%	7,100	36.5%	38,808	34.0%
Zip Code Unknown or Urbanicity Not Available	218	0.2%	18	0.1%	200	0.2%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,622.2	21,799.8	57,964.9	20,998.4	59,906.7	21,925.2
Average Median Home Value <sup>3</sup>	199,788.4	131,753.5	193,864.6	131,015.3	200,805.5	131,866.4
Average Percent Unemployment <sup>3</sup>	5.9	3.2	6.0	3.2	5.8	3.2
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,353	95.9%	18,807	96.6%	109,546	95.8%
Median Home Value Available	128,297	95.9%	18,801	96.5%	109,496	95.8%
Percent Unemployment Available	128,581	96.1%	18,840	96.7%	109,741	96.0%
All SES Indicators Available	128,167	95.8%	18,784	96.5%	109,383	95.7%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,971	1.5%	391	2.0%	1,580	1.4%
Adult BMI 20-29	16,905	12.6%	2,642	13.6%	14,263	12.5%
Adult BMI 30-39	21,226	15.9%	3,229	16.6%	17,997	15.7%
Adult BMI 40 or greater	10,665	8.0%	1,441	7.4%	9,224	8.1%
Alcohol or Drug Abuse	5,740	4.3%	863	4.4%	4,877	4.3%
Alcohol Use Abuse	3,622	2.7%	619	3.2%	3,003	2.6%
Any Cancer	16,462	12.3%	2,939	15.1%	13,523	11.8%
Asthma	11,819	8.8%	1,432	7.4%	10,387	9.1%

**Table 1g. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	6,218	4.6%	927	4.8%	5,291	4.6%
Blood Stem Cell Transplant	18	0.0%	4	0.0%	14	0.0%
Chronic Kidney Disease	44,858	33.5%	8,426	43.3%	36,432	31.9%
Congestive Heart Failure	29,504	22.1%	5,889	30.2%	23,615	20.7%
Chronic Obstructive Pulmonary Disease (COPD)	31,467	23.5%	5,489	28.2%	25,978	22.7%
Coronary Artery Disease	45,907	34.3%	8,387	43.1%	37,520	32.8%
Cystic Fibrosis	25	0.0%	3	0.0%	22	0.0%
Diabetes Mellitus	59,820	44.7%	9,842	50.5%	49,978	43.7%
Drug Abuse Dependence	2,639	2.0%	296	1.5%	2,343	2.0%
HIV	525	0.4%	62	0.3%	463	0.4%
Hypertension	100,360	75.0%	15,972	82.0%	84,388	73.8%
Interstitial Lung Disease	4,061	3.0%	905	4.6%	3,156	2.8%
Liver Disease	9,595	7.2%	1,591	8.2%	8,004	7.0%
Neurologic Conditions	29,662	22.2%	5,335	27.4%	24,327	21.3%
Obesity	41,509	31.0%	6,038	31.0%	35,471	31.0%
Pulmonary Conditions	30,122	22.5%	5,149	26.4%	24,973	21.8%
Sickle Cell Disease	324	0.2%	37	0.2%	287	0.3%
Smoking	33,087	24.7%	5,539	28.4%	27,548	24.1%
Solid Organ or Stem Cell Transplant	258	0.2%	35	0.2%	223	0.2%
Solid Organ Transplant	240	0.2%	31	0.2%	209	0.2%
Vascular Disease	108,364	81.0%	17,125	87.9%	91,239	79.8%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,333	3.2%	782	4.0%	3,551	3.1%
Glucocorticoids Inhaled	14,855	11.1%	2,276	11.7%	12,579	11.0%

**Table 1g. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	25,166	18.8%	3,943	20.2%	21,223	18.6%
Glucocorticoids Ophthalmic	2,574	1.9%	432	2.2%	2,142	1.9%
Glucocorticoids Systemic	52,230	39.0%	7,902	40.6%	44,328	38.8%
Glucocorticoids Topical	9,855	7.4%	1,580	8.1%	8,275	7.2%
Immune Modulators	7,270	5.4%	1,325	6.8%	5,945	5.2%
Immunosuppressants	4,005	3.0%	650	3.3%	3,355	2.9%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	12,029	9.0%	1,772	9.1%	10,257	9.0%
Angiotensin receptor blockers (ARBs)	11,314	8.5%	1,664	8.5%	9,650	8.4%
Vasopressors	2,142	1.6%	1,153	5.9%	989	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.9	3.7	2.9	3.3
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	32,719	24.5%	3,971	20.4%	28,748	25.2%
Diarrhea	13,778	10.3%	1,485	7.6%	12,293	10.8%
Dyspnea/Short of Breath	101,121	75.6%	16,330	83.9%	84,791	74.2%
Fever	30,892	23.1%	4,495	23.1%	26,397	23.1%
Headache	1,630	1.2%	160	0.8%	1,470	1.3%
Malaise or Fatigue	44,610	33.3%	5,796	29.8%	38,814	34.0%
Multisystem Inflammatory Syndrome	93	0.1%	8	0.0%	85	0.1%
Myalgia	2,140	1.6%	154	0.8%	1,986	1.7%
Nasal Congestion	689	0.5%	61	0.3%	628	0.5%
Nausea or Vomiting	13,522	10.1%	1,358	7.0%	12,164	10.6%
Smell or Taste Disturbance	1,137	0.8%	78	0.4%	1,059	0.9%

**Table 1g. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sore Throat	1,164	0.9%	105	0.5%	1,059	0.9%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	17.0	15.6	18.9	13.4	16.6
Mean number of emergency room encounters	1.3	2.8	1.4	2.9	1.3	2.8
Mean number of inpatient hospital encounters	0.3	0.8	0.4	0.8	0.3	0.7
Mean number of non-acute institutional encounters	0.1	0.5	0.2	0.6	0.1	0.4
Mean number of other ambulatory encounters	3.6	9.1	4.4	10.0	3.5	8.9
Mean number of filled prescriptions	20.9	20.3	23.7	22.6	20.4	19.9
Mean number of generics dispensed	8.9	6.0	9.6	6.1	8.8	6.0
Mean number of unique drug classes dispensed	8.3	5.5	9.0	5.5	8.2	5.5
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	133,773	100.0%	19,474	100.0%	114,299	100.0%



**Table 1g. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	178	0.1%	52	0.3%	126	0.1%
Intensive Care	71,384	53.4%	15,933	81.8%	55,451	48.5%
Mechanical Ventilation	23,810	17.8%	11,910	61.2%	11,900	10.4%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,780	2.8%	1,306	6.7%	2,474	2.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	841,628	N/A	590,496	N/A	8,156	N/A
<b>Demographic Characteristics</b>						
Age (years)	55.2	19.7	53.0	20.1	60.5	19.0
Age						
0-5 years	8,231	1.0%	6,765	1.1%	60	0.7%
6-11 years	12,438	1.5%	10,116	1.7%	75	0.9%
12-18 years	31,580	3.8%	24,731	4.2%	195	2.4%
19-29 years	89,419	10.6%	71,508	12.1%	594	7.3%
30-39 years	86,781	10.3%	69,550	11.8%	562	6.9%
40-49 years	90,333	10.7%	69,081	11.7%	661	8.1%
50-64 years	168,258	20.0%	118,775	20.1%	1,691	20.7%
65-74 years	193,277	23.0%	120,639	20.4%	2,324	28.5%
≥ 75 years	161,311	19.2%	99,331	16.8%	1,994	24.4%
Sex						
Female	454,938	54.1%	319,769	54.2%	4,496	55.1%
Male	386,690	45.9%	270,727	45.8%	3,660	44.9%
Race <sup>2</sup>						
American Indian or Alaska Native	2,853	0.3%	1,672	0.3%	25	0.3%
Asian	16,783	2.0%	15,521	2.6%	42	0.5%
Black or African American	80,325	9.5%	60,024	10.2%	966	11.8%
Native Hawaiian or Other Pacific Islander	4,353	0.5%	3,408	0.6%	23	0.3%
Unknown	354,640	42.1%	269,156	45.6%	2,793	34.2%
White	382,674	45.5%	240,715	40.8%	4,307	52.8%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	241,194	N/A	1,782	N/A
<b>Demographic Characteristics</b>				
Age (years)	60.6	18.4	46.6	18.9
Age				
0-5 years	1,366	0.6%	40	2.2%
6-11 years	2,196	0.9%	51	2.9%
12-18 years	6,546	2.7%	108	6.1%
19-29 years	17,080	7.1%	237	13.3%
30-39 years	16,433	6.8%	236	13.2%
40-49 years	20,303	8.4%	288	16.2%
50-64 years	47,361	19.6%	431	24.2%
65-74 years	70,077	29.1%	237	13.3%
≥ 75 years	59,832	24.8%	154	8.6%
Sex				
Female	129,745	53.8%	928	52.1%
Male	111,449	46.2%	854	47.9%
Race <sup>2</sup>				
American Indian or Alaska Native	1,153	0.5%	3	0.2%
Asian	1,118	0.5%	102	5.7%
Black or African American	19,282	8.0%	53	3.0%
Native Hawaiian or Other Pacific Islander	855	0.4%	67	3.8%
Unknown	81,626	33.8%	1,065	59.8%
White	137,160	56.9%	492	27.6%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	52,568	6.2%	45,311	7.7%	196	2.4%
No	283,161	33.6%	163,281	27.7%	3,704	45.4%
Unknown	505,899	60.1%	381,904	64.7%	4,256	52.2%
Month-Year of Cohort Entry						
April 2020	27,111	3.2%	22,948	3.9%	220	2.7%
May 2020	22,097	2.6%	18,094	3.1%	156	1.9%
June 2020	32,987	3.9%	26,175	4.4%	236	2.9%
July 2020	66,695	7.9%	49,855	8.4%	620	7.6%
August 2020	43,119	5.1%	30,379	5.1%	406	5.0%
September 2020	38,451	4.6%	26,098	4.4%	349	4.3%
October 2020	65,215	7.7%	43,212	7.3%	617	7.6%
November 2020	131,906	15.7%	88,242	14.9%	1,325	16.2%
December 2020	171,908	20.4%	114,321	19.4%	1,877	23.0%
January 2021	138,781	16.5%	95,270	16.1%	1,480	18.1%
February 2021	57,294	6.8%	40,948	6.9%	524	6.4%
March 2021	46,064	5.5%	34,954	5.9%	346	4.2%
Census Bureau (CB) Region						
Midwest	144,132	17.1%	90,701	15.4%	1,212	14.9%
Northeast	157,687	18.7%	137,265	23.2%	1,240	15.2%
South	403,464	47.9%	254,633	43.1%	5,195	63.7%
West	134,564	16.0%	107,891	18.3%	509	6.2%
CB Region (Invalid)	561	0.1%	0	0.0%	0	0.0%
CB Region (Missing)	675	0.1%	0	0.0%	0	0.0%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin				
Yes	6,982	2.9%	79	4.4%
No	115,924	48.1%	252	14.1%
Unknown	118,288	49.0%	1,451	81.4%
Month-Year of Cohort Entry				
April 2020	3,892	1.6%	51	2.9%
May 2020	3,774	1.6%	73	4.1%
June 2020	6,487	2.7%	89	5.0%
July 2020	16,073	6.7%	147	8.2%
August 2020	12,176	5.0%	158	8.9%
September 2020	11,888	4.9%	116	6.5%
October 2020	21,161	8.8%	225	12.6%
November 2020	42,086	17.4%	253	14.2%
December 2020	55,439	23.0%	271	15.2%
January 2021	41,829	17.3%	202	11.3%
February 2021	15,719	6.5%	103	5.8%
March 2021	10,670	4.4%	94	5.3%
Census Bureau (CB) Region				
Midwest	52,219	21.7%	0	0.0%
Northeast	19,182	8.0%	0	0.0%
South	143,635	59.6%	1	0.1%
West	26,158	10.8%	6	0.3%
CB Region (Invalid)	0	0.0%	561	31.5%
CB Region (Missing)	0	0.0%	675	37.9%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	545	0.1%	6	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	590,496	70.2%	590,496	100.0%	0	0.0%
Suburban (population 2,500 - 49,999)	8,156	1.0%	0	0.0%	8,156	100.0%
Rural (population < 2,500)	241,194	28.7%	0	0.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	1,782	0.2%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	68,000.1	26,556.9	72,379.5	28,528.6	53,103.3	17,787.3
Average Median Home Value <sup>3</sup>	257,527.4	197,349.8	297,715.8	220,342.0	170,320.2	117,531.5
Average Percent Unemployment <sup>3</sup>	5.3	2.7	5.3	2.5	6.2	3.0
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	771,807	91.7%	529,842	89.7%	7,554	92.6%
Median Home Value Available	771,570	91.7%	529,647	89.7%	7,550	92.6%
Percent Unemployment Available	772,942	91.8%	530,010	89.8%	7,592	93.1%
All SES Indicators Available	770,924	91.6%	529,595	89.7%	7,537	92.4%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	6,271	0.7%	4,336	0.7%	87	1.1%
Adult BMI 20-29	76,667	9.1%	53,196	9.0%	825	10.1%
Adult BMI 30-39	83,949	10.0%	54,489	9.2%	1,014	12.4%
Adult BMI 40 or greater	34,973	4.2%	21,741	3.7%	479	5.9%
Alcohol or Drug Abuse	20,122	2.4%	14,050	2.4%	256	3.1%
Alcohol Use Abuse	12,763	1.5%	9,130	1.5%	165	2.0%
Any Cancer	51,856	6.2%	34,309	5.8%	632	7.7%
Asthma	50,991	6.1%	35,473	6.0%	540	6.6%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	0	0.0%	539	30.2%
Urbanicity				
Urban (population >= 50,000)	0	0.0%	0	0.0%
Suburban (population 2,500 - 49,999)	0	0.0%	0	0.0%
Rural (population < 2,500)	241,194	100.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	1,782	100.0%
Proxies for Socioeconomic Status (SES)				
Average Median Household Income <sup>3</sup>	58,575.1	19,405.1	64,095.3	17,305.3
Average Median Home Value <sup>3</sup>	169,459.4	93,197.4	341,000.0	194,344.7
Average Percent Unemployment <sup>3</sup>	5.3	3.2	7.3	4.1
Missingness in Proxies for Socioeconomic Status (SES)				
Median Household Income Available	234,404	97.2%	7	0.4%
Median Home Value Available	234,366	97.2%	7	0.4%
Percent Unemployment Available	235,333	97.6%	7	0.4%
All SES Indicators Available	233,785	96.9%	7	0.4%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>				
Adult BMI 19.9 or less	1,843	0.8%	5	0.3%
Adult BMI 20-29	22,594	9.4%	52	2.9%
Adult BMI 30-39	28,397	11.8%	49	2.7%
Adult BMI 40 or greater	12,737	5.3%	16	0.9%
Alcohol or Drug Abuse	5,800	2.4%	16	0.9%
Alcohol Use Abuse	3,458	1.4%	10	0.6%
Any Cancer	16,840	7.0%	75	4.2%
Asthma	14,893	6.2%	85	4.8%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	22,663	2.7%	14,484	2.5%	287	3.5%
Blood Stem Cell Transplant	64	0.0%	47	0.0%	1	0.0%
Chronic Kidney Disease	111,502	13.2%	72,703	12.3%	1,325	16.2%
Congestive Heart Failure	65,171	7.7%	40,715	6.9%	815	10.0%
Chronic Obstructive Pulmonary Disease (COPD)	78,865	9.4%	46,725	7.9%	1,109	13.6%
Coronary Artery Disease	126,840	15.1%	80,152	13.6%	1,544	18.9%
Cystic Fibrosis	118	0.0%	88	0.0%	2	0.0%
Diabetes Mellitus	183,790	21.8%	116,995	19.8%	2,203	27.0%
Drug Abuse Dependence	9,183	1.1%	6,275	1.1%	120	1.5%
HIV	2,605	0.3%	2,260	0.4%	19	0.2%
Hypertension	356,107	42.3%	224,707	38.1%	4,386	53.8%
Interstitial Lung Disease	9,233	1.1%	5,989	1.0%	110	1.3%
Liver Disease	33,090	3.9%	22,580	3.8%	359	4.4%
Neurologic Conditions	90,725	10.8%	58,015	9.8%	1,174	14.4%
Obesity	159,821	19.0%	103,737	17.6%	1,882	23.1%
Pulmonary Conditions	45,451	5.4%	29,441	5.0%	545	6.7%
Sickle Cell Disease	870	0.1%	715	0.1%	9	0.1%
Smoking	97,027	11.5%	58,865	10.0%	1,333	16.3%
Solid Organ or Stem Cell Transplant	644	0.1%	470	0.1%	5	0.1%
Solid Organ Transplant	580	0.1%	423	0.1%	4	0.0%
Vascular Disease	395,995	47.1%	252,351	42.7%	4,767	58.4%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	12,323	1.5%	7,890	1.3%	164	2.0%
Glucocorticoids Inhaled	46,355	5.5%	30,197	5.1%	520	6.4%



**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	7,863	3.3%	29	1.6%
Blood Stem Cell Transplant	15	0.0%	1	0.1%
Chronic Kidney Disease	37,350	15.5%	124	7.0%
Congestive Heart Failure	23,566	9.8%	75	4.2%
Chronic Obstructive Pulmonary Disease (COPD)	30,974	12.8%	57	3.2%
Coronary Artery Disease	44,990	18.7%	154	8.6%
Cystic Fibrosis	26	0.0%	2	0.1%
Diabetes Mellitus	64,334	26.7%	258	14.5%
Drug Abuse Dependence	2,781	1.2%	7	0.4%
HIV	322	0.1%	4	0.2%
Hypertension	126,533	52.5%	481	27.0%
Interstitial Lung Disease	3,126	1.3%	8	0.4%
Liver Disease	10,098	4.2%	53	3.0%
Neurologic Conditions	31,444	13.0%	92	5.2%
Obesity	54,050	22.4%	152	8.5%
Pulmonary Conditions	15,413	6.4%	52	2.9%
Sickle Cell Disease	143	0.1%	3	0.2%
Smoking	36,727	15.2%	102	5.7%
Solid Organ or Stem Cell Transplant	168	0.1%	1	0.1%
Solid Organ Transplant	153	0.1%	0	0.0%
Vascular Disease	138,332	57.4%	545	30.6%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>				
Chemotherapy	4,251	1.8%	18	1.0%
Glucocorticoids Inhaled	15,588	6.5%	50	2.8%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	98,245	11.7%	66,489	11.3%	1,056	12.9%
Glucocorticoids Ophthalmic	10,427	1.2%	6,901	1.2%	142	1.7%
Glucocorticoids Systemic	192,542	22.9%	122,056	20.7%	2,296	28.2%
Glucocorticoids Topical	47,825	5.7%	33,558	5.7%	464	5.7%
Immune Modulators	23,000	2.7%	15,212	2.6%	270	3.3%
Immunosuppressants	13,385	1.6%	8,606	1.5%	173	2.1%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	52,106	6.2%	32,081	5.4%	643	7.9%
Angiotensin receptor blockers (ARBs)	47,339	5.6%	31,273	5.3%	555	6.8%
Vasopressors	2,343	0.3%	1,543	0.3%	34	0.4%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.3	1.1	2.3	1.5	2.7
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	170,838	20.3%	111,773	18.9%	1,866	22.9%
Diarrhea	32,923	3.9%	20,728	3.5%	382	4.7%
Dyspnea/Short of Breath	170,822	20.3%	108,631	18.4%	2,014	24.7%
Fever	101,366	12.0%	67,539	11.4%	1,072	13.1%
Headache	9,883	1.2%	7,135	1.2%	99	1.2%
Malaise or Fatigue	108,347	12.9%	70,516	11.9%	1,270	15.6%
Multisystem Inflammatory Syndrome	106	0.0%	83	0.0%	2	0.0%
Myalgia	21,536	2.6%	14,967	2.5%	185	2.3%
Nasal Congestion	21,064	2.5%	13,622	2.3%	203	2.5%
Nausea or Vomiting	37,557	4.5%	22,750	3.9%	453	5.6%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	30,556	12.7%	144	8.1%
Glucocorticoids Ophthalmic	3,364	1.4%	20	1.1%
Glucocorticoids Systemic	67,971	28.2%	219	12.3%
Glucocorticoids Topical	13,717	5.7%	86	4.8%
Immune Modulators	7,491	3.1%	27	1.5%
Immunosuppressants	4,590	1.9%	16	0.9%
<b>Concurrent Use Of (-30, 0)</b>				
Angiotensin-converting enzyme (ACE) inhibitors	19,306	8.0%	76	4.3%
Angiotensin receptor blockers (ARBs)	15,443	6.4%	68	3.8%
Vasopressors	765	0.3%	1	0.1%
<b>Comorbidity</b>				
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.4	2.5	0.6	1.6
<b>Symptoms at Diagnosis (-1, 14)</b>				
Cough	56,940	23.6%	259	14.5%
Diarrhea	11,754	4.9%	59	3.3%
Dyspnea/Short of Breath	59,932	24.8%	245	13.7%
Fever	32,537	13.5%	218	12.2%
Headache	2,616	1.1%	33	1.9%
Malaise or Fatigue	36,442	15.1%	119	6.7%
Multisystem Inflammatory Syndrome	21	0.0%	0	0.0%
Myalgia	6,339	2.6%	45	2.5%
Nasal Congestion	7,202	3.0%	37	2.1%
Nausea or Vomiting	14,302	5.9%	52	2.9%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Smell or Taste Disturbance	17,387	2.1%	11,517	2.0%	186	2.3%
Sore Throat	29,710	3.5%	20,580	3.5%	253	3.1%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.5	11.7	8.3	11.7	9.7	12.5
Mean number of emergency room encounters	0.5	1.6	0.4	1.6	0.6	1.8
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.3	0.1	0.3
Mean number of other ambulatory encounters	1.5	5.6	1.4	5.3	1.8	5.9
Mean number of filled prescriptions	12.2	16.0	10.9	14.8	16.1	19.7
Mean number of generics dispensed	5.2	5.0	4.8	4.8	6.5	5.6
Mean number of unique drug classes dispensed	4.9	4.6	4.5	4.4	6.1	5.1
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	698,908	83.0%	481,137	81.5%	7,079	86.8%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Smell or Taste Disturbance	5,642	2.3%	42	2.4%
Sore Throat	8,801	3.6%	76	4.3%
<b>Health Service Utilization Intensity</b>				
Mean number of ambulatory encounters	9.1	11.8	7.4	12.0
Mean number of emergency room encounters	0.5	1.7	0.3	1.5
Mean number of inpatient hospital encounters	0.1	0.5	0.1	1.2
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.1
Mean number of other ambulatory encounters	1.7	6.2	0.9	4.2
Mean number of filled prescriptions	15.2	18.5	6.8	10.9
Mean number of generics dispensed	6.3	5.5	2.9	4.0
Mean number of unique drug classes dispensed	5.9	5.1	2.8	3.7
<b>COVID Diagnosis (-7, 7)</b>				
Diagnosis Code for COVID-19	209,062	86.7%	1,630	91.5%

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	93	0.0%	73	0.0%	0	0.0%
Intensive Care	45,948	5.5%	31,374	5.3%	522	6.4%
Mechanical Ventilation	15,720	1.9%	10,338	1.8%	185	2.3%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,654	0.3%	1,883	0.3%	24	0.3%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1h. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>				
Extracorporeal Membrane Oxygenation (ECMO)	19	0.0%	1	0.1%
Intensive Care	13,966	5.8%	86	4.8%
Mechanical Ventilation	5,163	2.1%	34	1.9%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	742	0.3%	5	0.3%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	133,773	N/A	86,049	N/A	1,598	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.6	13.1	71.1	13.8	71.9	13.1
Age						
0-5 years	78	0.1%	60	0.1%	2	0.1%
6-11 years	43	0.0%	31	0.0%	1	0.1%
12-18 years	187	0.1%	145	0.2%	3	0.2%
19-29 years	1,268	0.9%	989	1.1%	15	0.9%
30-39 years	2,723	2.0%	2,145	2.5%	26	1.6%
40-49 years	5,002	3.7%	3,656	4.2%	54	3.4%
50-64 years	21,935	16.4%	14,492	16.8%	256	16.0%
65-74 years	44,797	33.5%	28,130	32.7%	545	34.1%
≥ 75 years	57,740	43.2%	36,401	42.3%	696	43.6%
Sex						
Female	64,820	48.5%	42,126	49.0%	816	51.1%
Male	68,953	51.5%	43,923	51.0%	782	48.9%
Race <sup>2</sup>						
American Indian or Alaska Native	550	0.4%	238	0.3%	6	0.4%
Asian	1,984	1.5%	1,827	2.1%	7	0.4%
Black or African American	23,583	17.6%	17,187	20.0%	295	18.5%
Native Hawaiian or Other Pacific Islander	1,188	0.9%	937	1.1%	5	0.3%
Unknown	31,330	23.4%	22,322	25.9%	309	19.3%
White	75,138	56.2%	43,538	50.6%	976	61.1%



**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	45,908	N/A	218	N/A
<b>Demographic Characteristics</b>				
Age (years)	72.5	11.8	64.0	13.2
Age				
0-5 years	16	0.0%	0	0.0%
6-11 years	11	0.0%	0	0.0%
12-18 years	37	0.1%	2	0.9%
19-29 years	264	0.6%	0	0.0%
30-39 years	542	1.2%	10	4.6%
40-49 years	1,267	2.8%	25	11.5%
50-64 years	7,117	15.5%	70	32.1%
65-74 years	16,065	35.0%	57	26.1%
≥ 75 years	20,589	44.8%	54	24.8%
Sex				
Female	21,772	47.4%	106	48.6%
Male	24,136	52.6%	112	51.4%
Race <sup>2</sup>				
American Indian or Alaska Native	306	0.7%	0	0.0%
Asian	142	0.3%	8	3.7%
Black or African American	6,093	13.3%	8	3.7%
Native Hawaiian or Other Pacific Islander	227	0.5%	19	8.7%
Unknown	8,583	18.7%	116	53.2%
White	30,557	66.6%	67	30.7%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,757	4.3%	4,858	5.6%	27	1.7%
No	78,836	58.9%	45,967	53.4%	1,052	65.8%
Unknown	49,180	36.8%	35,224	40.9%	519	32.5%
Month-Year of Cohort Entry						
April 2020	7,011	5.2%	5,913	6.9%	56	3.5%
May 2020	3,624	2.7%	2,813	3.3%	31	1.9%
June 2020	3,963	3.0%	2,906	3.4%	40	2.5%
July 2020	10,709	8.0%	7,396	8.6%	123	7.7%
August 2020	7,234	5.4%	4,443	5.2%	101	6.3%
September 2020	5,374	4.0%	2,996	3.5%	63	3.9%
October 2020	9,445	7.1%	5,347	6.2%	130	8.1%
November 2020	20,025	15.0%	12,143	14.1%	245	15.3%
December 2020	26,996	20.2%	16,627	19.3%	329	20.6%
January 2021	22,864	17.1%	14,388	16.7%	286	17.9%
February 2021	9,868	7.4%	6,458	7.5%	122	7.6%
March 2021	6,660	5.0%	4,619	5.4%	72	4.5%
Census Bureau (CB) Region						
Midwest	28,500	21.3%	17,829	20.7%	275	17.2%
Northeast	16,960	12.7%	13,994	16.3%	195	12.2%
South	72,471	54.2%	42,429	49.3%	1,058	66.2%
West	15,626	11.7%	11,797	13.7%	70	4.4%
CB Region (Invalid)	66	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	46	0.0%	0	0.0%	0	0.0%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin				
Yes	862	1.9%	10	4.6%
No	31,765	69.2%	52	23.9%
Unknown	13,281	28.9%	156	71.6%
Month-Year of Cohort Entry				
April 2020	1,035	2.3%	7	3.2%
May 2020	775	1.7%	5	2.3%
June 2020	1,013	2.2%	4	1.8%
July 2020	3,178	6.9%	12	5.5%
August 2020	2,666	5.8%	24	11.0%
September 2020	2,298	5.0%	17	7.8%
October 2020	3,923	8.5%	45	20.6%
November 2020	7,595	16.5%	42	19.3%
December 2020	10,008	21.8%	32	14.7%
January 2021	8,175	17.8%	15	6.9%
February 2021	3,279	7.1%	9	4.1%
March 2021	1,963	4.3%	6	2.8%
Census Bureau (CB) Region				
Midwest	10,396	22.6%	0	0.0%
Northeast	2,771	6.0%	0	0.0%
South	28,983	63.1%	1	0.5%
West	3,758	8.2%	1	0.5%
CB Region (Invalid)	0	0.0%	66	30.3%
CB Region (Missing)	0	0.0%	46	21.1%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	104	0.1%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	86,049	64.3%	86,049	100.0%	0	0.0%
Suburban (population 2,500 - 49,999)	1,598	1.2%	0	0.0%	1,598	100.0%
Rural (population < 2,500)	45,908	34.3%	0	0.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	218	0.2%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,622.2	21,799.8	62,711.8	23,889.6	50,108.5	16,206.6
Average Median Home Value <sup>3</sup>	199,788.4	131,753.5	228,238.1	150,035.7	149,074.2	88,588.4
Average Percent Unemployment <sup>3</sup>	5.9	3.2	6.0	3.0	6.5	3.3
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,353	95.9%	81,621	94.9%	1,521	95.2%
Median Home Value Available	128,297	95.9%	81,585	94.8%	1,523	95.3%
Percent Unemployment Available	128,581	96.1%	81,638	94.9%	1,530	95.7%
All SES Indicators Available	128,167	95.8%	81,580	94.8%	1,519	95.1%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,971	1.5%	1,370	1.6%	25	1.6%
Adult BMI 20-29	16,905	12.6%	11,245	13.1%	185	11.6%
Adult BMI 30-39	21,226	15.9%	13,511	15.7%	270	16.9%
Adult BMI 40 or greater	10,665	8.0%	6,626	7.7%	141	8.8%
Alcohol or Drug Abuse	5,740	4.3%	3,942	4.6%	86	5.4%
Alcohol Use Abuse	3,622	2.7%	2,552	3.0%	56	3.5%
Any Cancer	16,462	12.3%	10,697	12.4%	199	12.5%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	0	0.0%	104	47.7%
Urbanicity				
Urban (population >= 50,000)	0	0.0%	0	0.0%
Suburban (population 2,500 - 49,999)	0	0.0%	0	0.0%
Rural (population < 2,500)	45,908	100.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	218	100.0%
Proxies for Socioeconomic Status (SES)				
Average Median Household Income <sup>3</sup>	54,362.6	16,506.7	46,922.5	20,956.5
Average Median Home Value <sup>3</sup>	150,118.1	70,090.7	176,000.0	146,936.8
Average Percent Unemployment <sup>3</sup>	5.7	3.4	11.6	5.8
Missingness in Proxies for Socioeconomic Status (SES)				
Median Household Income Available	45,209	98.5%	2	0.9%
Median Home Value Available	45,187	98.4%	2	0.9%
Percent Unemployment Available	45,411	98.9%	2	0.9%
All SES Indicators Available	45,066	98.2%	2	0.9%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>				
Adult BMI 19.9 or less	574	1.3%	2	0.9%
Adult BMI 20-29	5,466	11.9%	9	4.1%
Adult BMI 30-39	7,429	16.2%	16	7.3%
Adult BMI 40 or greater	3,896	8.5%	2	0.9%
Alcohol or Drug Abuse	1,707	3.7%	5	2.3%
Alcohol Use Abuse	1,012	2.2%	2	0.9%
Any Cancer	5,546	12.1%	20	9.2%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Asthma	11,819	8.8%	7,832	9.1%	130	8.1%
Autoimmune Conditions	6,218	4.6%	3,924	4.6%	94	5.9%
Blood Stem Cell Transplant	18	0.0%	12	0.0%	0	0.0%
Chronic Kidney Disease	44,858	33.5%	29,386	34.2%	523	32.7%
Congestive Heart Failure	29,504	22.1%	18,760	21.8%	348	21.8%
Chronic Obstructive Pulmonary Disease (COPD)	31,467	23.5%	18,913	22.0%	425	26.6%
Coronary Artery Disease	45,907	34.3%	29,223	34.0%	564	35.3%
Cystic Fibrosis	25	0.0%	14	0.0%	0	0.0%
Diabetes Mellitus	59,820	44.7%	38,001	44.2%	738	46.2%
Drug Abuse Dependence	2,639	2.0%	1,782	2.1%	37	2.3%
HIV	525	0.4%	447	0.5%	5	0.3%
Hypertension	100,360	75.0%	63,317	73.6%	1,245	77.9%
Interstitial Lung Disease	4,061	3.0%	2,590	3.0%	56	3.5%
Liver Disease	9,595	7.2%	6,404	7.4%	119	7.4%
Neurologic Conditions	29,662	22.2%	19,356	22.5%	394	24.7%
Obesity	41,509	31.0%	26,351	30.6%	514	32.2%
Pulmonary Conditions	30,122	22.5%	18,959	22.0%	367	23.0%
Sickle Cell Disease	324	0.2%	259	0.3%	4	0.3%
Smoking	33,087	24.7%	20,015	23.3%	440	27.5%
Solid Organ or Stem Cell Transplant	258	0.2%	187	0.2%	2	0.1%
Solid Organ Transplant	240	0.2%	175	0.2%	2	0.1%
Vascular Disease	108,364	81.0%	68,622	79.7%	1,324	82.9%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,333	3.2%	2,819	3.3%	60	3.8%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Asthma	3,840	8.4%	17	7.8%
Autoimmune Conditions	2,194	4.8%	6	2.8%
Blood Stem Cell Transplant	6	0.0%	0	0.0%
Chronic Kidney Disease	14,886	32.4%	63	28.9%
Congestive Heart Failure	10,362	22.6%	34	15.6%
Chronic Obstructive Pulmonary Disease (COPD)	12,104	26.4%	25	11.5%
Coronary Artery Disease	16,066	35.0%	54	24.8%
Cystic Fibrosis	10	0.0%	1	0.5%
Diabetes Mellitus	20,998	45.7%	83	38.1%
Drug Abuse Dependence	817	1.8%	3	1.4%
HIV	73	0.2%	0	0.0%
Hypertension	35,669	77.7%	129	59.2%
Interstitial Lung Disease	1,411	3.1%	4	1.8%
Liver Disease	3,055	6.7%	17	7.8%
Neurologic Conditions	9,881	21.5%	31	14.2%
Obesity	14,591	31.8%	53	24.3%
Pulmonary Conditions	10,748	23.4%	48	22.0%
Sickle Cell Disease	61	0.1%	0	0.0%
Smoking	12,602	27.5%	30	13.8%
Solid Organ or Stem Cell Transplant	69	0.2%	0	0.0%
Solid Organ Transplant	63	0.1%	0	0.0%
Vascular Disease	38,277	83.4%	141	64.7%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>				
Chemotherapy	1,448	3.2%	6	2.8%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Inhaled	14,855	11.1%	9,207	10.7%	181	11.3%
Glucocorticoids NonSystemic	25,166	18.8%	16,030	18.6%	294	18.4%
Glucocorticoids Ophthalmic	2,574	1.9%	1,637	1.9%	33	2.1%
Glucocorticoids Systemic	52,230	39.0%	31,383	36.5%	661	41.4%
Glucocorticoids Topical	9,855	7.4%	6,536	7.6%	104	6.5%
Immune Modulators	7,270	5.4%	4,793	5.6%	80	5.0%
Immunosuppressants	4,005	3.0%	2,602	3.0%	58	3.6%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	12,029	9.0%	7,358	8.6%	150	9.4%
Angiotensin receptor blockers (ARBs)	11,314	8.5%	7,376	8.6%	138	8.6%
Vasopressors	2,142	1.6%	1,424	1.7%	25	1.6%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.1	3.4	3.1	3.4
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	32,719	24.5%	21,296	24.7%	392	24.5%
Diarrhea	13,778	10.3%	8,821	10.3%	160	10.0%
Dyspnea/Short of Breath	101,121	75.6%	64,471	74.9%	1,203	75.3%
Fever	30,892	23.1%	21,042	24.5%	357	22.3%
Headache	1,630	1.2%	1,141	1.3%	19	1.2%
Malaise or Fatigue	44,610	33.3%	28,121	32.7%	589	36.9%
Multisystem Inflammatory Syndrome	93	0.1%	74	0.1%	1	0.1%
Myalgia	2,140	1.6%	1,416	1.6%	27	1.7%
Nasal Congestion	689	0.5%	421	0.5%	7	0.4%



**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Inhaled	5,456	11.9%	11	5.0%
Glucocorticoids NonSystemic	8,814	19.2%	28	12.8%
Glucocorticoids Ophthalmic	898	2.0%	6	2.8%
Glucocorticoids Systemic	20,133	43.9%	53	24.3%
Glucocorticoids Topical	3,200	7.0%	15	6.9%
Immune Modulators	2,392	5.2%	5	2.3%
Immunosuppressants	1,343	2.9%	2	0.9%
<b>Concurrent Use Of (-30, 0)</b>				
Angiotensin-converting enzyme (ACE) inhibitors	4,499	9.8%	22	10.1%
Angiotensin receptor blockers (ARBs)	3,787	8.2%	13	6.0%
Vasopressors	692	1.5%	1	0.5%
<b>Comorbidity</b>				
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.9	3.3	2.0	2.9
<b>Symptoms at Diagnosis (-1, 14)</b>				
Cough	10,996	24.0%	35	16.1%
Diarrhea	4,777	10.4%	20	9.2%
Dyspnea/Short of Breath	35,302	76.9%	145	66.5%
Fever	9,441	20.6%	52	23.9%
Headache	465	1.0%	5	2.3%
Malaise or Fatigue	15,861	34.5%	39	17.9%
Multisystem Inflammatory Syndrome	18	0.0%	0	0.0%
Myalgia	695	1.5%	2	0.9%
Nasal Congestion	259	0.6%	2	0.9%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Nausea or Vomiting	13,522	10.1%	8,360	9.7%	164	10.3%
Smell or Taste Disturbance	1,137	0.8%	728	0.8%	26	1.6%
Sore Throat	1,164	0.9%	739	0.9%	13	0.8%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	17.0	13.9	17.4	14.0	16.9
Mean number of emergency room encounters	1.3	2.8	1.3	2.9	1.4	2.4
Mean number of inpatient hospital encounters	0.3	0.8	0.3	0.8	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.5	0.1	0.5	0.1	0.5
Mean number of other ambulatory encounters	3.6	9.1	3.5	9.0	3.9	8.9
Mean number of filled prescriptions	20.9	20.3	20.0	19.6	22.5	20.9
Mean number of generics dispensed	8.9	6.0	8.6	5.9	9.4	6.2
Mean number of unique drug classes	8.3	5.5	8.1	5.3	8.8	5.6
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	133,773	100.0%	86,049	100.0%	1,598	100.0%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Nausea or Vomiting	4,981	10.8%	17	7.8%
Smell or Taste Disturbance	382	0.8%	1	0.5%
Sore Throat	411	0.9%	1	0.5%
<b>Health Service Utilization Intensity</b>				
Mean number of ambulatory encounters	13.4	16.1	14.1	21.1
Mean number of emergency room encounters	1.3	2.6	0.9	2.8
Mean number of inpatient hospital encounters	0.3	0.7	0.5	3.3
Mean number of non-acute institutional encounters	0.1	0.4	0.0	0.3
Mean number of other ambulatory encounters	3.7	9.4	3.1	8.2
Mean number of filled prescriptions	22.5	21.5	15.9	15.8
Mean number of generics dispensed	9.4	6.3	6.3	5.7
Mean number of unique drug classes dispensed	8.8	5.7	5.9	5.2
<b>COVID Diagnosis (-7, 7)</b>				
Diagnosis Code for COVID-19	45,908	100.0%	218	100.0%

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	178	0.1%	143	0.2%	1	0.1%
Intensive Care	71,384	53.4%	47,856	55.6%	826	51.7%
Mechanical Ventilation	23,810	17.8%	15,193	17.7%	290	18.1%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,780	2.8%	2,613	3.0%	42	2.6%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1i. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>				
Extracorporeal Membrane Oxygenation (ECMO)	33	0.1%	1	0.5%
Intensive Care	22,577	49.2%	125	57.3%
Mechanical Ventilation	8,283	18.0%	44	20.2%
Renal Replacement Therapy and Acute Renal Failure	1,119	2.4%	6	2.8%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	770,924	N/A	14,519	N/A	76,638	N/A
<b>Demographic Characteristics</b>						
Age (years)	56.1	19.5	49.3	15.3	64.4	14.0
Age						
0-5 years	6,786	0.9%	108	0.7%	78	0.1%
6-11 years	10,352	1.3%	119	0.8%	138	0.2%
12-18 years	26,823	3.5%	286	2.0%	402	0.5%
19-29 years	77,963	10.1%	2,120	14.6%	2,689	3.5%
30-39 years	77,074	10.0%	2,883	19.9%	4,676	6.1%
40-49 years	80,476	10.4%	2,284	15.7%	5,615	7.3%
50-64 years	151,575	19.7%	2,537	17.5%	16,183	21.1%
65-74 years	185,123	24.0%	2,775	19.1%	28,419	37.1%
≥ 75 years	154,752	20.1%	1,407	9.7%	18,438	24.1%
Sex						
Female	417,159	54.1%	7,406	51.0%	46,573	60.8%
Male	353,765	45.9%	7,113	49.0%	30,065	39.2%
Race <sup>2</sup>						
American Indian or Alaska Native	2,740	0.4%	0	0.0%	0	0.0%
Asian	14,519	1.9%	14,519	100.0%	0	0.0%
Black or African American	76,638	9.9%	0	0.0%	76,638	100.0%
Native Hawaiian or Other Pacific Islander	4,163	0.5%	0	0.0%	0	0.0%
Unknown	316,780	41.1%	0	0.0%	0	0.0%

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	2,740	N/A	4,163	N/A	356,084	N/A	316,780	N/A	454,144	N/A
<b>Demographic Characteristics</b>										
Age (years)	56.5	15.3	67.3	9.9	64.3	15.4	45.0	21.0	63.8	15.2
Age										
0-5 years	7	0.3%	3	0.1%	800	0.2%	5,790	1.8%	996	0.2%
6-11 years	12	0.4%	5	0.1%	1,331	0.4%	8,747	2.8%	1,605	0.4%
12-18 years	56	2.0%	18	0.4%	4,629	1.3%	21,432	6.8%	5,391	1.2%
19-29 years	240	8.8%	132	3.2%	19,691	5.5%	53,091	16.8%	24,872	5.5%
30-39 years	285	10.4%	153	3.7%	22,419	6.3%	46,658	14.7%	30,416	6.7%
40-49 years	365	13.3%	217	5.2%	24,747	6.9%	47,248	14.9%	33,228	7.3%
50-64 years	682	24.9%	522	12.5%	61,860	17.4%	69,791	22.0%	81,784	18.0%
65-74 years	646	23.6%	1,902	45.7%	113,143	31.8%	38,238	12.1%	146,885	32.3%
≥ 75 years	447	16.3%	1,211	29.1%	107,464	30.2%	25,785	8.1%	128,967	28.4%
Sex										
Female	1,587	57.9%	1,955	47.0%	192,590	54.1%	167,048	52.7%	250,111	55.1%
Male	1,153	42.1%	2,208	53.0%	163,494	45.9%	149,732	47.3%	204,033	44.9%
Race <sup>2</sup>										
American Indian or Alaska Native	2,740	100.0%	0	0.0%	0	0.0%	0	0.0%	2,740	0.6%
Asian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	14,519	3.2%
Black or African American	0	0.0%	0	0.0%	0	0.0%	0	0.0%	76,638	16.9%
Native Hawaiian or Other Pacific Islander	0	0.0%	4,163	100.0%	0	0.0%	0	0.0%	4,163	0.9%
Unknown	0	0.0%	0	0.0%	0	0.0%	316,780	100.0%	0	0.0%

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
White	356,084	46.2%	0	0.0%	0	0.0%
Hispanic origin						
Yes	48,004	6.2%	1,380	9.5%	793	1.0%
No	280,330	36.4%	4,080	28.1%	52,464	68.5%
Unknown	442,590	57.4%	9,059	62.4%	23,381	30.5%
Month-Year of Cohort Entry						
April 2020	21,923	2.8%	610	4.2%	5,025	6.6%
May 2020	18,459	2.4%	433	3.0%	2,713	3.5%
June 2020	30,583	4.0%	619	4.3%	3,771	4.9%
July 2020	63,350	8.2%	1,115	7.7%	8,780	11.5%
August 2020	39,647	5.1%	710	4.9%	5,033	6.6%
September 2020	35,410	4.6%	560	3.9%	3,152	4.1%
October 2020	60,467	7.8%	875	6.0%	4,505	5.9%
November 2020	121,808	15.8%	2,154	14.8%	8,191	10.7%
December 2020	159,316	20.7%	2,991	20.6%	13,262	17.3%
January 2021	128,297	16.6%	2,510	17.3%	12,966	16.9%
February 2021	52,106	6.8%	1,095	7.5%	5,516	7.2%
March 2021	39,558	5.1%	847	5.8%	3,724	4.9%
Census Bureau (CB) Region						
Midwest	143,876	18.7%	1,436	9.9%	10,110	13.2%
Northeast	90,764	11.8%	2,340	16.1%	7,252	9.5%
South	401,953	52.1%	5,003	34.5%	54,827	71.5%
West	134,331	17.4%	5,740	39.5%	4,449	5.8%



**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
White	0	0.0%	0	0.0%	356,084	100.0%	0	0.0%	356,084	78.4%
Hispanic origin										
Yes	671	24.5%	134	3.2%	4,713	1.3%	40,313	12.7%	7,691	1.7%
No	1,330	48.5%	3,590	86.2%	217,921	61.2%	945	0.3%	279,385	61.5%
Unknown	739	27.0%	439	10.5%	133,450	37.5%	275,522	87.0%	167,068	36.8%
Month-Year of Cohort Entry										
April 2020	78	2.8%	138	3.3%	8,796	2.5%	7,276	2.3%	14,647	3.2%
May 2020	55	2.0%	105	2.5%	8,495	2.4%	6,658	2.1%	11,801	2.6%
June 2020	115	4.2%	157	3.8%	12,091	3.4%	13,830	4.4%	16,753	3.7%
July 2020	226	8.2%	386	9.3%	24,472	6.9%	28,371	9.0%	34,979	7.7%
August 2020	128	4.7%	231	5.5%	17,154	4.8%	16,391	5.2%	23,256	5.1%
September 2020	137	5.0%	170	4.1%	16,569	4.7%	14,822	4.7%	20,588	4.5%
October 2020	244	8.9%	276	6.6%	30,037	8.4%	24,530	7.7%	35,937	7.9%
November 2020	461	16.8%	616	14.8%	60,000	16.8%	50,386	15.9%	71,422	15.7%
December 2020	576	21.0%	822	19.7%	76,785	21.6%	64,880	20.5%	94,436	20.8%
January 2021	471	17.2%	783	18.8%	60,286	16.9%	51,281	16.2%	77,016	17.0%
February 2021	146	5.3%	295	7.1%	23,873	6.7%	21,181	6.7%	30,925	6.8%
March 2021	103	3.8%	184	4.4%	17,526	4.9%	17,174	5.4%	22,384	4.9%
Census Bureau (CB) Region										
Midwest	258	9.4%	705	16.9%	73,490	20.6%	57,877	18.3%	85,999	18.9%
Northeast	112	4.1%	272	6.5%	34,919	9.8%	45,869	14.5%	44,895	9.9%
South	1,233	45.0%	1,875	45.0%	186,929	52.5%	152,086	48.0%	249,867	55.0%
West	1,137	41.5%	1,311	31.5%	60,746	17.1%	60,948	19.2%	73,383	16.2%

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	529,595	68.7%	13,434	92.5%	56,679	74.0%
Suburban (population 2,500 - 49,999)	7,537	1.0%	36	0.2%	955	1.2%
Rural (population < 2,500)	233,785	30.3%	1,049	7.2%	19,003	24.8%
Zip Code Unknown or Urbanicity Not Available	7	0.0%	0	0.0%	1	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	68,019.2	26,550.0	83,700.0	31,115.5	53,534.1	20,949.6
Average Median Home Value <sup>3</sup>	257,584.7	197,296.3	412,125.3	275,422.3	192,027.0	134,508.0
Average Percent Unemployment <sup>3</sup>	5.3	2.7	4.8	1.9	7.3	3.8
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	770,924	100.0%	14,519	100.0%	76,638	100.0%
Median Home Value Available	770,924	100.0%	14,519	100.0%	76,638	100.0%
Percent Unemployment Available	770,924	100.0%	14,519	100.0%	76,638	100.0%
All SES Indicators Available	770,924	100.0%	14,519	100.0%	76,638	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	5,886	0.8%	130	0.9%	869	1.1%
Adult BMI 20-29	71,744	9.3%	1,316	9.1%	9,070	11.8%

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Urbanicity										
Urban (population >= 50,000)	1,585	57.8%	3,300	79.3%	218,903	61.5%	235,694	74.4%	293,901	64.7%
Suburban (population 2,500 - 49,999)	24	0.9%	22	0.5%	3,955	1.1%	2,545	0.8%	4,992	1.1%
Rural (population < 2,500)	1,131	41.3%	841	20.2%	133,223	37.4%	78,538	24.8%	155,247	34.2%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	3	0.0%	3	0.0%	4	0.0%
Proxies for Socioeconomic Status (SES)										
Average Median Household Income <sup>3</sup>	61,096.0	22,499.9	67,312.3	25,110.5	67,827.0	24,719.7	71,090.0	28,484.2	65,877.1	24,886.1
Average Median Home Value <sup>3</sup>	222,156.8	143,479.6	269,914.0	183,200.4	245,306.8	180,425.4	280,307.6	219,301.5	241,734.7	179,571.9
Average Percent Unemployment <sup>3</sup>	6.1	3.5	5.5	2.6	5.0	2.4	5.1	2.5	5.4	2.8
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	2,740	100.0%	4,163	100.0%	356,084	100.0%	316,780	100.0%	454,144	100.0%
Median Home Value Available	2,740	100.0%	4,163	100.0%	356,084	100.0%	316,780	100.0%	454,144	100.0%
Percent Unemployment Available	2,740	100.0%	4,163	100.0%	356,084	100.0%	316,780	100.0%	454,144	100.0%
All SES Indicators Available	2,740	100.0%	4,163	100.0%	356,084	100.0%	316,780	100.0%	454,144	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	11	0.4%	53	1.3%	3,441	1.0%	1,382	0.4%	4,504	1.0%
Adult BMI 20-29	159	5.8%	698	16.8%	39,394	11.1%	21,107	6.7%	50,637	11.1%

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 30-39	79,563	10.3%	603	4.2%	13,137	17.1%
Adult BMI 40 or greater	33,395	4.3%	138	1.0%	7,083	9.2%
Alcohol or Drug Abuse	18,895	2.5%	103	0.7%	2,977	3.9%
Alcohol Use Abuse	11,912	1.5%	74	0.5%	1,827	2.4%
Any Cancer	48,883	6.3%	496	3.4%	7,435	9.7%
Asthma	47,038	6.1%	646	4.4%	7,474	9.8%
Autoimmune Conditions	21,481	2.8%	193	1.3%	3,975	5.2%
Blood Stem Cell Transplant	54	0.0%	1	0.0%	7	0.0%
Chronic Kidney Disease	107,424	13.9%	1,242	8.6%	20,476	26.7%
Congestive Heart Failure	62,730	8.1%	434	3.0%	12,576	16.4%
Chronic Obstructive Pulmonary Disease (COPD)	75,921	9.8%	492	3.4%	11,291	14.7%
Coronary Artery Disease	121,447	15.8%	1,203	8.3%	18,197	23.7%
Cystic Fibrosis	101	0.0%	1	0.0%	7	0.0%
Diabetes Mellitus	174,771	22.7%	2,855	19.7%	32,436	42.3%
Drug Abuse Dependence	8,664	1.1%	42	0.3%	1,466	1.9%
HIV	2,432	0.3%	30	0.2%	801	1.0%
Hypertension	337,780	43.8%	4,355	30.0%	54,686	71.4%
Interstitial Lung Disease	8,957	1.2%	96	0.7%	1,249	1.6%
Liver Disease	31,122	4.0%	534	3.7%	3,900	5.1%
Neurologic Conditions	86,150	11.2%	602	4.1%	12,346	16.1%
Obesity	150,806	19.6%	1,102	7.6%	26,135	34.1%
Pulmonary Conditions	43,084	5.6%	455	3.1%	7,143	9.3%

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 30-39	250	9.1%	504	12.1%	41,701	11.7%	23,368	7.4%	56,195	12.4%
Adult BMI 40 or greater	132	4.8%	144	3.5%	16,382	4.6%	9,516	3.0%	23,879	5.3%
Alcohol or Drug Abuse	103	3.8%	113	2.7%	10,614	3.0%	4,985	1.6%	13,910	3.1%
Alcohol Use Abuse	70	2.6%	73	1.8%	6,720	1.9%	3,148	1.0%	8,764	1.9%
Any Cancer	152	5.5%	322	7.7%	29,311	8.2%	11,167	3.5%	37,716	8.3%
Asthma	241	8.8%	251	6.0%	23,075	6.5%	15,351	4.8%	31,687	7.0%
Autoimmune Conditions	101	3.7%	153	3.7%	11,812	3.3%	5,247	1.7%	16,234	3.6%
Blood Stem Cell Transplant	0	0.0%	1	0.0%	21	0.0%	24	0.0%	30	0.0%
Chronic Kidney Disease	383	14.0%	964	23.2%	63,483	17.8%	20,876	6.6%	86,548	19.1%
Congestive Heart Failure	175	6.4%	440	10.6%	38,394	10.8%	10,711	3.4%	52,019	11.5%
Chronic Obstructive Pulmonary Disease (COPD)	263	9.6%	426	10.2%	49,928	14.0%	13,521	4.3%	62,400	13.7%
Coronary Artery Disease	389	14.2%	1,000	24.0%	77,402	21.7%	23,256	7.3%	98,191	21.6%
Cystic Fibrosis	0	0.0%	0	0.0%	56	0.0%	37	0.0%	64	0.0%
Diabetes Mellitus	817	29.8%	1,730	41.6%	93,529	26.3%	43,404	13.7%	131,367	28.9%
Drug Abuse Dependence	46	1.7%	46	1.1%	4,751	1.3%	2,313	0.7%	6,351	1.4%
HIV	16	0.6%	10	0.2%	759	0.2%	816	0.3%	1,616	0.4%
Hypertension	1,205	44.0%	2,582	62.0%	192,572	54.1%	82,380	26.0%	255,400	56.2%
Interstitial Lung Disease	29	1.1%	75	1.8%	5,736	1.6%	1,772	0.6%	7,185	1.6%
Liver Disease	148	5.4%	273	6.6%	17,021	4.8%	9,246	2.9%	21,876	4.8%
Neurologic Conditions	294	10.7%	533	12.8%	55,092	15.5%	17,283	5.5%	68,867	15.2%
Obesity	556	20.3%	848	20.4%	76,839	21.6%	45,326	14.3%	105,480	23.2%
Pulmonary Conditions	181	6.6%	315	7.6%	25,804	7.2%	9,186	2.9%	33,898	7.5%

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sickle Cell Disease	795	0.1%	5	0.0%	532	0.7%
Smoking	92,818	12.0%	634	4.4%	14,083	18.4%
Solid Organ or Stem Cell Transplant	596	0.1%	15	0.1%	117	0.2%
Solid Organ Transplant	542	0.1%	14	0.1%	110	0.1%
Vascular Disease	374,655	48.6%	4,792	33.0%	57,179	74.6%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	11,694	1.5%	144	1.0%	1,865	2.4%
Glucocorticoids Inhaled	43,597	5.7%	504	3.5%	5,929	7.7%
Glucocorticoids NonSystemic	91,594	11.9%	1,504	10.4%	11,866	15.5%
Glucocorticoids Ophthalmic	9,848	1.3%	165	1.1%	1,535	2.0%
Glucocorticoids Systemic	181,417	23.5%	2,044	14.1%	22,356	29.2%
Glucocorticoids Topical	44,155	5.7%	918	6.3%	5,366	7.0%
Immune Modulators	21,788	2.8%	301	2.1%	2,988	3.9%
Immunosuppressants	12,715	1.6%	159	1.1%	2,126	2.8%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	49,578	6.4%	596	4.1%	6,118	8.0%
Angiotensin receptor blockers (ARBs)	44,630	5.8%	877	6.0%	7,405	9.7%
Vasopressors	2,235	0.3%	35	0.2%	418	0.5%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.4	0.6	1.6	2.1	3.0

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Sickle Cell Disease	1	0.0%	4	0.1%	40	0.0%	213	0.1%	582	0.1%
Smoking	370	13.5%	591	14.2%	57,426	16.1%	19,714	6.2%	73,104	16.1%
Solid Organ or Stem Cell Transplant	0	0.0%	6	0.1%	279	0.1%	179	0.1%	417	0.1%
Solid Organ Transplant	0	0.0%	5	0.1%	258	0.1%	155	0.0%	387	0.1%
Vascular Disease	1,311	47.8%	2,803	67.3%	214,607	60.3%	93,963	29.7%	280,692	61.8%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	46	1.7%	83	2.0%	6,639	1.9%	2,917	0.9%	8,777	1.9%
Glucocorticoids Inhaled	167	6.1%	193	4.6%	25,024	7.0%	11,780	3.7%	31,817	7.0%
Glucocorticoids NonSystemic	336	12.3%	586	14.1%	49,613	13.9%	27,689	8.7%	63,905	14.1%
Glucocorticoids Ophthalmic	38	1.4%	94	2.3%	5,441	1.5%	2,575	0.8%	7,273	1.6%
Glucocorticoids Systemic	699	25.5%	939	22.6%	99,264	27.9%	56,115	17.7%	125,302	27.6%
Glucocorticoids Topical	155	5.7%	344	8.3%	22,694	6.4%	14,678	4.6%	29,477	6.5%
Immune Modulators	73	2.7%	151	3.6%	12,383	3.5%	5,892	1.9%	15,896	3.5%
Immunosuppressants	64	2.3%	95	2.3%	6,821	1.9%	3,450	1.1%	9,265	2.0%
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	232	8.5%	348	8.4%	27,780	7.8%	14,504	4.6%	35,074	7.7%
Angiotensin receptor blockers (ARBs)	183	6.7%	344	8.3%	23,174	6.5%	12,647	4.0%	31,983	7.0%
Vasopressors	3	0.1%	23	0.6%	1,258	0.4%	498	0.2%	1,737	0.4%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.3	1.7	2.7	1.6	2.6	0.6	1.7	1.7	2.7

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	160,591	20.8%	2,825	19.5%	17,476	22.8%
Diarrhea	31,347	4.1%	386	2.7%	4,264	5.6%
Dyspnea/Short of Breath	162,847	21.1%	2,503	17.2%	24,793	32.4%
Fever	94,747	12.3%	1,885	13.0%	11,766	15.4%
Headache	9,208	1.2%	154	1.1%	1,153	1.5%
Malaise or Fatigue	99,622	12.9%	1,320	9.1%	14,033	18.3%
Multisystem Inflammatory Syndrome	99	0.0%	0	0.0%	17	0.0%
Myalgia	20,229	2.6%	413	2.8%	1,912	2.5%
Nasal Congestion	19,750	2.6%	204	1.4%	1,316	1.7%
Nausea or Vomiting	35,972	4.7%	384	2.6%	4,851	6.3%
Smell or Taste Disturbance	16,365	2.1%	230	1.6%	1,402	1.8%
Sore Throat	27,398	3.6%	498	3.4%	1,476	1.9%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.6	11.8	6.1	9.5	11.2	15.5
Mean number of emergency room encounters	0.5	1.7	0.2	1.2	0.9	2.5
Mean number of inpatient hospital encounters	0.1	0.4	0.0	0.3	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.1	0.1	0.3
Mean number of other ambulatory encounters	1.6	5.8	0.9	4.0	2.4	7.7



**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	547	20.0%	956	23.0%	77,858	21.9%	60,929	19.2%	99,662	21.9%
Diarrhea	125	4.6%	187	4.5%	17,323	4.9%	9,062	2.9%	22,285	4.9%
Dyspnea/Short of Breath	696	25.4%	1,214	29.2%	88,973	25.0%	44,668	14.1%	118,179	26.0%
Fever	324	11.8%	585	14.1%	44,388	12.5%	35,799	11.3%	58,948	13.0%
Headache	39	1.4%	54	1.3%	3,436	1.0%	4,372	1.4%	4,836	1.1%
Malaise or Fatigue	320	11.7%	647	15.5%	55,895	15.7%	27,407	8.7%	72,215	15.9%
Multisystem Inflammatory Syndrome	0	0.0%	0	0.0%	41	0.0%	41	0.0%	58	0.0%
Myalgia	81	3.0%	101	2.4%	8,641	2.4%	9,081	2.9%	11,148	2.5%
Nasal Congestion	60	2.2%	51	1.2%	8,569	2.4%	9,550	3.0%	10,200	2.2%
Nausea or Vomiting	153	5.6%	221	5.3%	19,391	5.4%	10,972	3.5%	25,000	5.5%
Smell or Taste Disturbance	55	2.0%	61	1.5%	6,062	1.7%	8,555	2.7%	7,810	1.7%
Sore Throat	83	3.0%	126	3.0%	10,518	3.0%	14,697	4.6%	12,701	2.8%
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory	7.9	11.1	9.7	13.1	10.0	12.0	6.4	10.1	10.1	12.6
Mean number of emergency room encounters	0.7	2.0	0.5	1.4	0.6	1.8	0.3	1.2	0.6	1.9
Mean number of inpatient hospital encounters	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.3	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.3	0.1	0.3	0.0	0.2	0.1	0.3
Mean number of other ambulatory encounters	2.1	5.9	1.7	5.8	2.2	6.7	0.8	3.6	2.2	6.8

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of filled prescriptions	12.6	16.3	7.3	10.0	17.2	17.6
Mean number of generics dispensed	5.4	5.1	3.6	3.7	7.6	5.5
Mean number of unique drug classes dispensed	5.1	4.7	3.3	3.4	7.1	5.0
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	640,261	83.1%	11,521	79.4%	66,675	87.0%
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	84	0.0%	3	0.0%	15	0.0%
Intensive Care	44,099	5.7%	608	4.2%	8,912	11.6%
Mechanical Ventilation	15,191	2.0%	264	1.8%	3,290	4.3%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,544	0.3%	40	0.3%	950	1.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1j. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of filled prescriptions	13.9	17.3	13.8	14.2	15.6	18.0	8.3	13.1	15.6	17.8
Mean number of generics dispensed	5.6	5.3	6.5	4.8	6.5	5.4	3.7	4.4	6.6	5.4
Mean number of unique drug classes dispensed	5.2	4.9	6.1	4.4	6.2	4.9	3.5	4.0	6.2	4.9
<b>COVID Diagnosis (-7, 7)</b>										
Diagnosis Code for COVID-19	2,242	81.8%	3,585	86.1%	300,627	84.4%	255,611	80.7%	384,650	84.7%
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	0	0.0%	1	0.0%	24	0.0%	41	0.0%	43	0.0%
Intensive Care	144	5.3%	451	10.8%	24,969	7.0%	9,015	2.8%	35,084	7.7%
Mechanical Ventilation	50	1.8%	180	4.3%	8,466	2.4%	2,941	0.9%	12,250	2.7%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	4	0.1%	26	0.6%	1,048	0.3%	476	0.2%	2,068	0.5%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	128,167	N/A	1,844	N/A	22,995	N/A	541	N/A
<b>Demographic Characteristics</b>								
Age (years)	71.8	13.0	68.0	12.8	71.1	11.5	68.9	11.5
Age								
0-5 years	70	0.1%	0	0.0%	0	0.0%	0	0.0%
6-11 years	41	0.0%	0	0.0%	1	0.0%	0	0.0%
12-18 years	169	0.1%	0	0.0%	6	0.0%	0	0.0%
19-29 years	1,162	0.9%	24	1.3%	89	0.4%	7	1.3%
30-39 years	2,502	2.0%	105	5.7%	342	1.5%	9	1.7%
40-49 years	4,643	3.6%	122	6.6%	719	3.1%	29	5.4%
50-64 years	20,680	16.1%	283	15.3%	4,128	18.0%	113	20.9%
65-74 years	43,280	33.8%	703	38.1%	9,282	40.4%	211	39.0%
≥ 75 years	55,620	43.4%	607	32.9%	8,428	36.7%	172	31.8%
Sex								
Female	62,192	48.5%	794	43.1%	12,855	55.9%	290	53.6%
Male	65,975	51.5%	1,050	56.9%	10,140	44.1%	251	46.4%
Race <sup>2</sup>								
American Indian or Alaska Native	541	0.4%	0	0.0%	0	0.0%	541	100.0%
Asian	1,844	1.4%	1,844	100.0%	0	0.0%	0	0.0%
Black or African American	22,995	17.9%	0	0.0%	22,995	100.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	1,154	0.9%	0	0.0%	0	0.0%	0	0.0%
Unknown	29,461	23.0%	0	0.0%	0	0.0%	0	0.0%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
White	72,172	56.3%	0	0.0%	0	0.0%	0	0.0%
Hispanic origin								
Yes	5,507	4.3%	82	4.4%	50	0.2%	53	9.8%
No	78,104	60.9%	1,050	56.9%	18,458	80.3%	409	75.6%
Unknown	44,556	34.8%	712	38.6%	4,487	19.5%	79	14.6%
Month-Year of Cohort Entry								
April 2020	6,117	4.8%	137	7.4%	2,025	8.8%	22	4.1%
May 2020	3,284	2.6%	56	3.0%	869	3.8%	17	3.1%
June 2020	3,853	3.0%	73	4.0%	1,011	4.4%	15	2.8%
July 2020	10,577	8.3%	130	7.0%	2,701	11.7%	33	6.1%
August 2020	7,102	5.5%	74	4.0%	1,559	6.8%	23	4.3%
September 2020	5,256	4.1%	43	2.3%	818	3.6%	17	3.1%
October 2020	9,184	7.2%	92	5.0%	1,247	5.4%	42	7.8%
November 2020	19,254	15.0%	252	13.7%	2,394	10.4%	84	15.5%
December 2020	25,859	20.2%	368	20.0%	3,765	16.4%	121	22.4%
January 2021	21,992	17.2%	354	19.2%	3,727	16.2%	121	22.4%
February 2021	9,446	7.4%	154	8.4%	1,779	7.7%	31	5.7%
March 2021	6,243	4.9%	111	6.0%	1,100	4.8%	15	2.8%
Census Bureau (CB) Region								
Midwest	28,436	22.2%	271	14.7%	3,634	15.8%	55	10.2%
Northeast	12,005	9.4%	213	11.6%	1,721	7.5%	12	2.2%
South	72,144	56.3%	679	36.8%	16,784	73.0%	240	44.4%
West	15,582	12.2%	681	36.9%	856	3.7%	234	43.3%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Urbanicity								
Urban (population >= 50,000)	81,580	63.7%	1,700	92.2%	16,673	72.5%	234	43.3%
Suburban (population 2,500 - 49,999)	1,519	1.2%	7	0.4%	292	1.3%	6	1.1%
Rural (population < 2,500)	45,066	35.2%	137	7.4%	6,029	26.2%	301	55.6%
Zip Code Unknown or Urbanicity Not Available	2	0.0%	0	0.0%	1	0.0%	0	0.0%
Proxies for Socioeconomic Status (SES)								
Average Median Household Income <sup>3</sup>	59,642.1	21,790.3	74,312.9	26,438.3	49,821.0	18,812.9	52,968.6	18,463.8
Average Median Home Value <sup>3</sup>	199,835.9	131,672.4	322,685.3	196,328.0	170,627.7	114,732.6	170,280.6	106,737.1
Average Percent Unemployment <sup>3</sup>	5.8	3.1	5.2	2.0	7.8	4.0	7.2	4.7
Missingness in Proxies for Socioeconomic Status (SES)								
Median Household Income Available	128,167	100.0%	1,844	100.0%	22,995	100.0%	541	100.0%
Median Home Value Available	128,167	100.0%	1,844	100.0%	22,995	100.0%	541	100.0%
Percent Unemployment Available	128,167	100.0%	1,844	100.0%	22,995	100.0%	541	100.0%
All SES Indicators Available	128,167	100.0%	1,844	100.0%	22,995	100.0%	541	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>								
Adult BMI 19.9 or less	1,897	1.5%	29	1.6%	405	1.8%	2	0.4%
Adult BMI 20-29	16,385	12.8%	304	16.5%	3,128	13.6%	30	5.5%
Adult BMI 30-39	20,590	16.1%	131	7.1%	4,476	19.5%	53	9.8%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 40 or greater	10,338	8.1%	36	2.0%	2,645	11.5%	37	6.8%
Alcohol or Drug Abuse	5,479	4.3%	17	0.9%	1,171	5.1%	30	5.5%
Alcohol Use Abuse	3,439	2.7%	14	0.8%	733	3.2%	20	3.7%
Any Cancer	15,785	12.3%	149	8.1%	3,085	13.4%	55	10.2%
Asthma	11,284	8.8%	146	7.9%	2,564	11.2%	56	10.4%
Autoimmune Conditions	5,996	4.7%	37	2.0%	1,425	6.2%	35	6.5%
Blood Stem Cell Transplant	16	0.0%	0	0.0%	2	0.0%	0	0.0%
Chronic Kidney Disease	43,397	33.9%	511	27.7%	9,818	42.7%	146	27.0%
Congestive Heart Failure	28,483	22.2%	207	11.2%	6,327	27.5%	84	15.5%
Chronic Obstructive Pulmonary Disease (COPD)	30,446	23.8%	190	10.3%	5,208	22.6%	104	19.2%
Coronary Artery Disease	44,283	34.6%	456	24.7%	8,066	35.1%	141	26.1%
Cystic Fibrosis	22	0.0%	0	0.0%	1	0.0%	0	0.0%
Diabetes Mellitus	57,693	45.0%	872	47.3%	12,989	56.5%	283	52.3%
Drug Abuse Dependence	2,533	2.0%	5	0.3%	567	2.5%	15	2.8%
HIV	502	0.4%	2	0.1%	241	1.0%	0	0.0%
Hypertension	96,573	75.3%	1,201	65.1%	19,744	85.9%	365	67.5%
Interstitial Lung Disease	3,959	3.1%	41	2.2%	649	2.8%	16	3.0%
Liver Disease	9,177	7.2%	115	6.2%	1,571	6.8%	50	9.2%
Neurologic Conditions	28,489	22.2%	207	11.2%	5,165	22.5%	96	17.7%
Obesity	40,071	31.3%	266	14.4%	9,032	39.3%	137	25.3%
Pulmonary Conditions	28,943	22.6%	342	18.5%	4,858	21.1%	133	24.6%
Sickle Cell Disease	305	0.2%	2	0.1%	224	1.0%	0	0.0%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Smoking	32,021	25.0%	205	11.1%	5,964	25.9%	128	23.7%
Solid Organ or Stem Cell Transplant	249	0.2%	7	0.4%	62	0.3%	0	0.0%
Solid Organ Transplant	233	0.2%	7	0.4%	60	0.3%	0	0.0%
Vascular Disease	104,226	81.3%	1,282	69.5%	20,497	89.1%	400	73.9%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>								
Chemotherapy	4,150	3.2%	42	2.3%	798	3.5%	13	2.4%
Glucocorticoids Inhaled	14,304	11.2%	149	8.1%	2,411	10.5%	48	8.9%
Glucocorticoids NonSystemic	24,189	18.9%	340	18.4%	4,190	18.2%	79	14.6%
Glucocorticoids Ophthalmic	2,492	1.9%	45	2.4%	514	2.2%	8	1.5%
Glucocorticoids Systemic	50,415	39.3%	557	30.2%	8,298	36.1%	204	37.7%
Glucocorticoids Topical	9,431	7.4%	173	9.4%	1,618	7.0%	31	5.7%
Immune Modulators	7,020	5.5%	99	5.4%	1,294	5.6%	31	5.7%
Immunosuppressants	3,881	3.0%	45	2.4%	847	3.7%	23	4.3%
<b>Concurrent Use Of (-30, 0)</b>								
Angiotensin-converting enzyme (ACE) inhibitors	11,574	9.0%	128	6.9%	1,977	8.6%	60	11.1%
Angiotensin receptor blockers (ARBs)	10,880	8.5%	213	11.6%	2,376	10.3%	46	8.5%
Vasopressors	2,033	1.6%	42	2.3%	400	1.7%	6	1.1%
<b>Comorbidity</b>								
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	1.9	2.8	3.5	3.5	2.4	3.1
<b>Symptoms at Diagnosis (-1, 14)</b>								
Cough	31,342	24.5%	515	27.9%	5,499	23.9%	101	18.7%



**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Diarrhea	13,217	10.3%	165	8.9%	2,370	10.3%	58	10.7%
Dyspnea/Short of Breath	96,964	75.7%	1,422	77.1%	17,035	74.1%	421	77.8%
Fever	29,325	22.9%	511	27.7%	5,817	25.3%	97	17.9%
Headache	1,562	1.2%	31	1.7%	318	1.4%	6	1.1%
Malaise or Fatigue	42,856	33.4%	489	26.5%	7,981	34.7%	139	25.7%
Multisystem Inflammatory Syndrome	86	0.1%	0	0.0%	18	0.1%	0	0.0%
Myalgia	2,052	1.6%	36	2.0%	328	1.4%	10	1.8%
Nasal Congestion	659	0.5%	4	0.2%	105	0.5%	1	0.2%
Nausea or Vomiting	13,031	10.2%	131	7.1%	2,354	10.2%	55	10.2%
Smell or Taste Disturbance	1,106	0.9%	17	0.9%	224	1.0%	6	1.1%
Sore Throat	1,116	0.9%	21	1.1%	168	0.7%	4	0.7%
<b>Health Service Utilization Intensity</b>								
Mean number of ambulatory encounters	13.7	16.9	10.9	16.5	14.9	20.0	11.0	14.6
Mean number of emergency room encounters	1.3	2.7	0.8	2.1	1.5	3.3	1.5	3.1
Mean number of inpatient hospital encounters	0.3	0.7	0.1	0.5	0.3	0.8	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.5	0.0	0.3	0.1	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.7	9.2	2.0	6.9	4.1	10.3	3.7	8.3
Mean number of filled prescriptions	21.0	20.4	14.8	14.4	21.8	19.9	21.2	23.6
Mean number of generics dispensed	9.0	6.1	7.2	4.9	9.5	5.9	8.1	6.6

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of unique drug classes dispensed	8.4	5.5	6.7	4.4	8.8	5.3	7.5	6.0
<b>COVID Diagnosis (-7, 7)</b>								
Diagnosis Code for COVID-19	128,167	100.0%	1,844	100.0%	22,995	100.0%	541	100.0%
<b>Critical COVID Criteria (0, 0)</b>								
Extracorporeal Membrane Oxygenation (ECMO)	164	0.1%	10	0.5%	22	0.1%	0	0.0%
Intensive Care	68,362	53.3%	1,018	55.2%	12,533	54.5%	268	49.5%
Mechanical Ventilation	22,960	17.9%	406	22.0%	4,457	19.4%	96	17.7%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,610	2.8%	56	3.0%	1,275	5.5%	6	1.1%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	1,154	N/A	72,172	N/A	29,461	N/A	98,706	N/A
<b>Demographic Characteristics</b>								
Age (years)	73.3	8.8	74.6	11.0	65.6	16.6	73.6	11.3
Age								
0-5 years	0	0.0%	8	0.0%	62	0.2%	8	0.0%
6-11 years	0	0.0%	3	0.0%	37	0.1%	4	0.0%
12-18 years	0	0.0%	22	0.0%	141	0.5%	28	0.0%
19-29 years	2	0.2%	222	0.3%	818	2.8%	344	0.3%
30-39 years	11	1.0%	548	0.8%	1,487	5.0%	1,015	1.0%
40-49 years	22	1.9%	1,291	1.8%	2,460	8.4%	2,183	2.2%
50-64 years	99	8.6%	8,782	12.2%	7,275	24.7%	13,405	13.6%
65-74 years	508	44.0%	24,464	33.9%	8,112	27.5%	35,168	35.6%
≥ 75 years	512	44.4%	36,832	51.0%	9,069	30.8%	46,551	47.2%
Sex								
Female	429	37.2%	34,362	47.6%	13,462	45.7%	48,730	49.4%
Male	725	62.8%	37,810	52.4%	15,999	54.3%	49,976	50.6%
Race <sup>2</sup>								
American Indian or Alaska Native	0	0.0%	0	0.0%	0	0.0%	541	0.5%
Asian	0	0.0%	0	0.0%	0	0.0%	1,844	1.9%
Black or African American	0	0.0%	0	0.0%	0	0.0%	22,995	23.3%
Native Hawaiian or Other Pacific Islander	1,154	100.0%	0	0.0%	0	0.0%	1,154	1.2%
Unknown	0	0.0%	0	0.0%	29,461	100.0%	0	0.0%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
White	0	0.0%	72,172	100.0%	0	0.0%	72,172	73.1%
Hispanic origin								
Yes	6	0.5%	239	0.3%	5,077	17.2%	430	0.4%
No	1,115	96.6%	57,006	79.0%	66	0.2%	78,038	79.1%
Unknown	33	2.9%	14,927	20.7%	24,318	82.5%	20,238	20.5%
Month-Year of Cohort Entry								
April 2020	50	4.3%	2,670	3.7%	1,213	4.1%	4,904	5.0%
May 2020	36	3.1%	1,663	2.3%	643	2.2%	2,641	2.7%
June 2020	46	4.0%	1,840	2.5%	868	2.9%	2,985	3.0%
July 2020	124	10.7%	4,970	6.9%	2,619	8.9%	7,958	8.1%
August 2020	62	5.4%	3,754	5.2%	1,630	5.5%	5,472	5.5%
September 2020	42	3.6%	3,051	4.2%	1,285	4.4%	3,971	4.0%
October 2020	58	5.0%	5,598	7.8%	2,147	7.3%	7,037	7.1%
November 2020	156	13.5%	11,690	16.2%	4,678	15.9%	14,576	14.8%
December 2020	226	19.6%	15,409	21.4%	5,970	20.3%	19,889	20.1%
January 2021	227	19.7%	12,853	17.8%	4,710	16.0%	17,282	17.5%
February 2021	78	6.8%	5,323	7.4%	2,081	7.1%	7,365	7.5%
March 2021	49	4.2%	3,351	4.6%	1,617	5.5%	4,626	4.7%
Census Bureau (CB) Region								
Midwest	233	20.2%	16,665	23.1%	7,578	25.7%	20,858	21.1%
Northeast	62	5.4%	5,162	7.2%	4,835	16.4%	7,170	7.3%
South	527	45.7%	41,301	57.2%	12,613	42.8%	59,531	60.3%
West	332	28.8%	9,044	12.5%	4,435	15.1%	11,147	11.3%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Urbanicity								
Urban (population >= 50,000)	924	80.1%	41,274	57.2%	20,775	70.5%	60,805	61.6%
Suburban (population 2,500 - 49,999)	5	0.4%	918	1.3%	291	1.0%	1,228	1.2%
Rural (population < 2,500)	225	19.5%	29,980	41.5%	8,394	28.5%	36,672	37.2%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	1	0.0%	1	0.0%
Proxies for Socioeconomic Status (SES)								
Average Median Household Income <sup>3</sup>	64,793.0	23,512.0	61,387.7	21,137.5	62,034.1	22,953.9	58,928.2	21,369.5
Average Median Home Value <sup>3</sup>	253,585.6	175,105.9	198,495.2	122,403.7	216,666.3	150,759.4	194,812.5	124,798.8
Average Percent Unemployment <sup>3</sup>	5.6	2.6	5.3	2.6	5.6	2.9	5.9	3.2
Missingness in Proxies for Socioeconomic Status (SES)								
Median Household Income Available	1,154	100.0%	72,172	100.0%	29,461	100.0%	98,706	100.0%
Median Home Value Available	1,154	100.0%	72,172	100.0%	29,461	100.0%	98,706	100.0%
Percent Unemployment Available	1,154	100.0%	72,172	100.0%	29,461	100.0%	98,706	100.0%
All SES Indicators Available	1,154	100.0%	72,172	100.0%	29,461	100.0%	98,706	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>								
Adult BMI 19.9 or less	25	2.2%	1,127	1.6%	309	1.0%	1,588	1.6%
Adult BMI 20-29	222	19.2%	9,703	13.4%	2,998	10.2%	13,387	13.6%
Adult BMI 30-39	150	13.0%	11,751	16.3%	4,029	13.7%	16,561	16.8%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 40 or greater	45	3.9%	5,390	7.5%	2,185	7.4%	8,153	8.3%
Alcohol or Drug Abuse	37	3.2%	3,196	4.4%	1,028	3.5%	4,451	4.5%
Alcohol Use Abuse	21	1.8%	2,016	2.8%	635	2.2%	2,804	2.8%
Any Cancer	116	10.1%	9,448	13.1%	2,932	10.0%	12,853	13.0%
Asthma	83	7.2%	5,982	8.3%	2,453	8.3%	8,831	8.9%
Autoimmune Conditions	55	4.8%	3,369	4.7%	1,075	3.6%	4,921	5.0%
Blood Stem Cell Transplant	0	0.0%	8	0.0%	6	0.0%	10	0.0%
Chronic Kidney Disease	420	36.4%	24,957	34.6%	7,545	25.6%	35,852	36.3%
Congestive Heart Failure	206	17.9%	17,053	23.6%	4,606	15.6%	23,877	24.2%
Chronic Obstructive Pulmonary Disease (COPD)	189	16.4%	19,945	27.6%	4,810	16.3%	25,636	26.0%
Coronary Artery Disease	373	32.3%	27,695	38.4%	7,552	25.6%	36,731	37.2%
Cystic Fibrosis	0	0.0%	16	0.0%	5	0.0%	17	0.0%
Diabetes Mellitus	614	53.2%	31,439	43.6%	11,496	39.0%	46,197	46.8%
Drug Abuse Dependence	18	1.6%	1,442	2.0%	486	1.6%	2,047	2.1%
HIV	2	0.2%	140	0.2%	117	0.4%	385	0.4%
Hypertension	872	75.6%	55,748	77.2%	18,643	63.3%	77,930	79.0%
Interstitial Lung Disease	34	2.9%	2,478	3.4%	741	2.5%	3,218	3.3%
Liver Disease	96	8.3%	5,322	7.4%	2,023	6.9%	7,154	7.2%
Neurologic Conditions	208	18.0%	17,937	24.9%	4,876	16.6%	23,613	23.9%
Obesity	250	21.7%	21,978	30.5%	8,408	28.5%	31,663	32.1%
Pulmonary Conditions	216	18.7%	16,536	22.9%	6,858	23.3%	22,085	22.4%
Sickle Cell Disease	0	0.0%	14	0.0%	65	0.2%	240	0.2%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Smoking	226	19.6%	20,262	28.1%	5,236	17.8%	26,785	27.1%
Solid Organ or Stem Cell Transplant	4	0.3%	119	0.2%	57	0.2%	192	0.2%
Solid Organ Transplant	4	0.3%	111	0.2%	51	0.2%	182	0.2%
Vascular Disease	932	80.8%	60,596	84.0%	20,519	69.6%	83,707	84.8%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>								
Chemotherapy	37	3.2%	2,390	3.3%	870	3.0%	3,280	3.3%
Glucocorticoids Inhaled	81	7.0%	8,846	12.3%	2,769	9.4%	11,535	11.7%
Glucocorticoids NonSystemic	190	16.5%	14,508	20.1%	4,882	16.6%	19,307	19.6%
Glucocorticoids Ophthalmic	28	2.4%	1,402	1.9%	495	1.7%	1,997	2.0%
Glucocorticoids Systemic	360	31.2%	30,043	41.6%	10,953	37.2%	39,462	40.0%
Glucocorticoids Topical	105	9.1%	5,529	7.7%	1,975	6.7%	7,456	7.6%
Immune Modulators	58	5.0%	3,957	5.5%	1,581	5.4%	5,439	5.5%
Immunosuppressants	38	3.3%	2,116	2.9%	812	2.8%	3,069	3.1%
<b>Concurrent Use Of (-30, 0)</b>								
Angiotensin-converting enzyme (ACE) inhibitors	101	8.8%	6,718	9.3%	2,590	8.8%	8,984	9.1%
Angiotensin receptor blockers (ARBs)	113	9.8%	5,787	8.0%	2,345	8.0%	8,535	8.6%
Vasopressors	27	2.3%	1,125	1.6%	433	1.5%	1,600	1.6%
<b>Comorbidity</b>								
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.7	3.3	3.2	3.4	2.3	3.1	3.3	3.4
<b>Symptoms at Diagnosis (-1, 14)</b>								
Cough	311	26.9%	17,471	24.2%	7,445	25.3%	23,897	24.2%

**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Diarrhea	101	8.8%	7,786	10.8%	2,737	9.3%	10,480	10.6%
Dyspnea/Short of Breath	880	76.3%	55,293	76.6%	21,913	74.4%	75,051	76.0%
Fever	278	24.1%	15,598	21.6%	7,024	23.8%	22,301	22.6%
Headache	22	1.9%	773	1.1%	412	1.4%	1,150	1.2%
Malaise or Fatigue	365	31.6%	25,839	35.8%	8,043	27.3%	34,813	35.3%
Multisystem Inflammatory Syndrome	0	0.0%	29	0.0%	39	0.1%	47	0.0%
Myalgia	20	1.7%	1,109	1.5%	549	1.9%	1,503	1.5%
Nasal Congestion	4	0.3%	379	0.5%	166	0.6%	493	0.5%
Nausea or Vomiting	97	8.4%	7,580	10.5%	2,814	9.6%	10,217	10.4%
Smell or Taste Disturbance	14	1.2%	575	0.8%	270	0.9%	836	0.8%
Sore Throat	10	0.9%	618	0.9%	295	1.0%	821	0.8%
<b>Health Service Utilization Intensity</b>								
Mean number of ambulatory encounters	12.3	16.8	13.9	15.8	12.4	17.0	14.1	16.9
Mean number of emergency room encounters	1.0	1.9	1.3	2.7	1.2	2.4	1.4	2.8
Mean number of inpatient hospital encounters	0.2	0.7	0.3	0.8	0.2	0.7	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.3	0.1	0.5	0.1	0.4	0.1	0.5
Mean number of other ambulatory encounters	2.7	7.8	4.1	9.7	2.4	6.8	4.1	9.8
Mean number of filled prescriptions	17.0	16.4	22.2	21.0	18.0	19.1	21.9	20.7
Mean number of generics dispensed	8.1	5.3	9.4	6.2	7.7	5.7	9.4	6.1



**Table 1k. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of unique drug classes dispensed	7.5	4.9	8.8	5.7	7.2	5.2	8.8	5.6
<b>COVID Diagnosis (-7, 7)</b>								
Diagnosis Code for COVID-19	1,154	100.0%	72,172	100.0%	29,461	100.0%	98,706	100.0%
<b>Critical COVID Criteria (0, 0)</b>								
Extracorporeal Membrane Oxygenation (ECMO)	0	0.0%	47	0.1%	85	0.3%	79	0.1%
Intensive Care	687	59.5%	38,145	52.9%	15,711	53.3%	52,651	53.3%
Mechanical Ventilation	273	23.7%	12,822	17.8%	4,906	16.7%	18,054	18.3%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	37	3.2%	1,529	2.1%	707	2.4%	2,903	2.9%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1I. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	770,924	N/A	124,455	N/A	646,469	N/A
<b>Demographic Characteristics</b>						
Age (years)	56.1	19.5	71.8	12.9	53.1	19.6
Age						
0-5 years	6,786	0.9%	65	0.1%	6,721	1.0%
6-11 years	10,352	1.3%	38	0.0%	10,314	1.6%
12-18 years	26,823	3.5%	151	0.1%	26,672	4.1%
19-29 years	77,963	10.1%	1,084	0.9%	76,879	11.9%
30-39 years	77,074	10.0%	2,381	1.9%	74,693	11.6%
40-49 years	80,476	10.4%	4,505	3.6%	75,971	11.8%
50-64 years	151,575	19.7%	20,096	16.1%	131,479	20.3%
65-74 years	185,123	24.0%	42,274	34.0%	142,849	22.1%
≥ 75 years	154,752	20.1%	53,861	43.3%	100,891	15.6%
Sex						
Female	417,159	54.1%	60,182	48.4%	356,977	55.2%
Male	353,765	45.9%	64,273	51.6%	289,492	44.8%
Race <sup>2</sup>						
American Indian or Alaska Native	2,740	0.4%	525	0.4%	2,215	0.3%
Asian	14,519	1.9%	1,792	1.4%	12,727	2.0%
Black or African American	76,638	9.9%	22,432	18.0%	54,206	8.4%
Native Hawaiian or Other Pacific Islander	4,163	0.5%	1,122	0.9%	3,041	0.5%
Unknown	316,780	41.1%	28,623	23.0%	288,157	44.6%
White	356,084	46.2%	69,961	56.2%	286,123	44.3%

**Table 1I. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	48,004	6.2%	5,336	4.3%	42,668	6.6%
No	280,330	36.4%	75,956	61.0%	204,374	31.6%
Unknown	442,590	57.4%	43,163	34.7%	399,427	61.8%
Month-Year of Cohort Entry						
April 2020	21,923	2.8%	6,323	5.1%	15,600	2.4%
May 2020	18,459	2.4%	3,138	2.5%	15,321	2.4%
June 2020	30,583	4.0%	4,150	3.3%	26,433	4.1%
July 2020	63,350	8.2%	10,555	8.5%	52,795	8.2%
August 2020	39,647	5.1%	6,616	5.3%	33,031	5.1%
September 2020	35,410	4.6%	5,173	4.2%	30,237	4.7%
October 2020	60,467	7.8%	9,450	7.6%	51,017	7.9%
November 2020	121,808	15.8%	19,687	15.8%	102,121	15.8%
December 2020	159,316	20.7%	25,545	20.5%	133,771	20.7%
January 2021	128,297	16.6%	20,214	16.2%	108,083	16.7%
February 2021	52,106	6.8%	8,171	6.6%	43,935	6.8%
March 2021	39,558	5.1%	5,433	4.4%	34,125	5.3%
Census Bureau (CB) Region						
Midwest	143,876	18.7%	27,647	22.2%	116,229	18.0%
Northeast	90,764	11.8%	11,562	9.3%	79,202	12.3%
South	401,953	52.1%	70,131	56.4%	331,822	51.3%
West	134,331	17.4%	15,115	12.1%	119,216	18.4%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%

**Table 11. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	529,595	68.7%	79,094	63.6%	450,501	69.7%
Suburban (population 2,500 - 49,999)	7,537	1.0%	1,474	1.2%	6,063	0.9%
Rural (population < 2,500)	233,785	30.3%	43,885	35.3%	189,900	29.4%
Zip Code Unknown or Urbanicity Not Available	7	0.0%	2	0.0%	5	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	68,019.2	26,550.0	59,596.7	21,740.1	69,640.6	27,236.5
Average Median Home Value <sup>3</sup>	257,584.7	197,296.3	199,433.7	130,873.9	268,779.7	206,651.0
Average Percent Unemployment <sup>3</sup>	5.3	2.7	5.9	3.1	5.2	2.6
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	770,924	100.0%	124,455	100.0%	646,469	100.0%
Median Home Value Available	770,924	100.0%	124,455	100.0%	646,469	100.0%
Percent Unemployment Available	770,924	100.0%	124,455	100.0%	646,469	100.0%
All SES Indicators Available	770,924	100.0%	124,455	100.0%	646,469	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	5,886	0.8%	1,739	1.4%	4,147	0.6%
Adult BMI 20-29	71,744	9.3%	15,721	12.6%	56,023	8.7%
Adult BMI 30-39	79,563	10.3%	19,716	15.8%	59,847	9.3%
Adult BMI 40 or greater	33,395	4.3%	9,718	7.8%	23,677	3.7%
Alcohol or Drug Abuse	18,895	2.5%	5,095	4.1%	13,800	2.1%
Alcohol Use Abuse	11,912	1.5%	3,205	2.6%	8,707	1.3%
Any Cancer	48,883	6.3%	15,089	12.1%	33,794	5.2%

**Table 1I. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Asthma	47,038	6.1%	10,221	8.2%	36,817	5.7%
Autoimmune Conditions	21,481	2.8%	5,719	4.6%	15,762	2.4%
Blood Stem Cell Transplant	54	0.0%	16	0.0%	38	0.0%
Chronic Kidney Disease	107,424	13.9%	40,973	32.9%	66,451	10.3%
Congestive Heart Failure	62,730	8.1%	26,477	21.3%	36,253	5.6%
Chronic Obstructive Pulmonary Disease (COPD)	75,921	9.8%	28,000	22.5%	47,921	7.4%
Coronary Artery Disease	121,447	15.8%	41,454	33.3%	79,993	12.4%
Cystic Fibrosis	101	0.0%	20	0.0%	81	0.0%
Diabetes Mellitus	174,771	22.7%	55,184	44.3%	119,587	18.5%
Drug Abuse Dependence	8,664	1.1%	2,344	1.9%	6,320	1.0%
HIV	2,432	0.3%	478	0.4%	1,954	0.3%
Hypertension	337,780	43.8%	91,730	73.7%	246,050	38.1%
Interstitial Lung Disease	8,957	1.2%	3,511	2.8%	5,446	0.8%
Liver Disease	31,122	4.0%	8,450	6.8%	22,672	3.5%
Neurologic Conditions	86,150	11.2%	26,523	21.3%	59,627	9.2%
Obesity	150,806	19.6%	38,199	30.7%	112,607	17.4%
Pulmonary Conditions	43,084	5.6%	17,102	13.7%	25,982	4.0%
Sickle Cell Disease	795	0.1%	285	0.2%	510	0.1%
Smoking	92,818	12.0%	28,588	23.0%	64,230	9.9%
Solid Organ or Stem Cell Transplant	596	0.1%	243	0.2%	353	0.1%
Solid Organ Transplant	542	0.1%	227	0.2%	315	0.0%
Vascular Disease	374,655	48.6%	98,879	79.4%	275,776	42.7%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	11,694	1.5%	4,014	3.2%	7,680	1.2%

**Table 11. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Inhaled	43,597	5.7%	13,073	10.5%	30,524	4.7%
Glucocorticoids NonSystemic	91,594	11.9%	22,797	18.3%	68,797	10.6%
Glucocorticoids Ophthalmic	9,848	1.3%	2,441	2.0%	7,407	1.1%
Glucocorticoids Systemic	181,417	23.5%	42,582	34.2%	138,835	21.5%
Glucocorticoids Topical	44,155	5.7%	9,184	7.4%	34,971	5.4%
Immune Modulators	21,788	2.8%	6,781	5.4%	15,007	2.3%
Immunosuppressants	12,715	1.6%	3,777	3.0%	8,938	1.4%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	49,578	6.4%	11,427	9.2%	38,151	5.9%
Angiotensin receptor blockers (ARBs)	44,630	5.8%	10,796	8.7%	33,834	5.2%
Vasopressors	2,235	0.3%	1,410	1.1%	825	0.1%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.4	2.9	3.3	0.9	2.1
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	160,591	20.8%	38,719	31.1%	121,872	18.9%
Diarrhea	31,347	4.1%	14,059	11.3%	17,288	2.7%
Dyspnea/Short of Breath	162,847	21.1%	94,485	75.9%	68,362	10.6%
Fever	94,747	12.3%	33,661	27.0%	61,086	9.4%
Headache	9,208	1.2%	1,913	1.5%	7,295	1.1%
Malaise or Fatigue	99,622	12.9%	43,444	34.9%	56,178	8.7%
Multisystem Inflammatory Syndrome	99	0.0%	72	0.1%	27	0.0%
Myalgia	20,229	2.6%	3,308	2.7%	16,921	2.6%
Nasal Congestion	19,750	2.6%	1,449	1.2%	18,301	2.8%

**Table 11. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Nausea or Vomiting	35,972	4.7%	14,148	11.4%	21,824	3.4%
Smell or Taste Disturbance	16,365	2.1%	1,470	1.2%	14,895	2.3%
Sore Throat	27,398	3.6%	2,158	1.7%	25,240	3.9%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.6	11.8	13.1	16.8	7.7	10.3
Mean number of emergency room encounters	0.5	1.7	1.0	2.6	0.4	1.4
Mean number of inpatient hospital encounters	0.1	0.4	0.3	0.7	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.3	0.1	0.4	0.0	0.2
Mean number of other ambulatory encounters	1.6	5.8	3.4	9.0	1.2	4.8
Mean number of filled prescriptions	12.6	16.3	20.4	20.0	11.1	15.2
Mean number of generics dispensed	5.4	5.1	8.6	6.0	4.8	4.8
Mean number of unique drug classes	5.1	4.7	8.1	5.4	4.5	4.4
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	640,261	83.1%	122,562	98.5%	517,699	80.1%

**Table 1I. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	84	0.0%	83	0.1%	1	0.0%
Intensive Care	44,099	5.7%	42,821	34.4%	1,278	0.2%
Mechanical Ventilation	15,191	2.0%	14,844	11.9%	347	0.1%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,544	0.3%	2,490	2.0%	54	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)



**Table 1m. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	770,924	N/A	57,205	N/A	713,719	N/A
<b>Demographic Characteristics</b>						
Age (years)	56.1	19.5	71.5	13.7	54.8	19.5
Age						
0-5 years	6,786	0.9%	40	0.1%	6,746	0.9%
6-11 years	10,352	1.3%	25	0.0%	10,327	1.4%
12-18 years	26,823	3.5%	99	0.2%	26,724	3.7%
19-29 years	77,963	10.1%	708	1.2%	77,255	10.8%
30-39 years	77,074	10.0%	1,414	2.5%	75,660	10.6%
40-49 years	80,476	10.4%	2,216	3.9%	78,260	11.0%
50-64 years	151,575	19.7%	9,028	15.8%	142,547	20.0%
65-74 years	185,123	24.0%	18,670	32.6%	166,453	23.3%
≥ 75 years	154,752	20.1%	25,005	43.7%	129,747	18.2%
Sex						
Female	417,159	54.1%	29,639	51.8%	387,520	54.3%
Male	353,765	45.9%	27,566	48.2%	326,199	45.7%
Race <sup>2</sup>						
American Indian or Alaska Native	2,740	0.4%	257	0.4%	2,483	0.3%
Asian	14,519	1.9%	776	1.4%	13,743	1.9%
Black or African American	76,638	9.9%	9,980	17.4%	66,658	9.3%
Native Hawaiian or Other Pacific	4,163	0.5%	451	0.8%	3,712	0.5%
Unknown	316,780	41.1%	13,169	23.0%	303,611	42.5%
White	356,084	46.2%	32,572	56.9%	323,512	45.3%

**Table 1m. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	48,004	6.2%	2,211	3.9%	45,793	6.4%
No	280,330	36.4%	34,790	60.8%	245,540	34.4%
Unknown	442,590	57.4%	20,204	35.3%	422,386	59.2%
Month-Year of Cohort Entry						
April 2020	21,923	2.8%	2,731	4.8%	19,192	2.7%
May 2020	18,459	2.4%	1,295	2.3%	17,164	2.4%
June 2020	30,583	4.0%	1,529	2.7%	29,054	4.1%
July 2020	63,350	8.2%	4,321	7.6%	59,029	8.3%
August 2020	39,647	5.1%	2,857	5.0%	36,790	5.2%
September 2020	35,410	4.6%	2,298	4.0%	33,112	4.6%
October 2020	60,467	7.8%	4,422	7.7%	56,045	7.9%
November 2020	121,808	15.8%	9,491	16.6%	112,317	15.7%
December 2020	159,316	20.7%	12,117	21.2%	147,199	20.6%
January 2021	128,297	16.6%	9,791	17.1%	118,506	16.6%
February 2021	52,106	6.8%	3,798	6.6%	48,308	6.8%
March 2021	39,558	5.1%	2,555	4.5%	37,003	5.2%
Census Bureau (CB) Region						
Midwest	143,876	18.7%	13,407	23.4%	130,469	18.3%
Northeast	90,764	11.8%	5,895	10.3%	84,869	11.9%
South	401,953	52.1%	31,207	54.6%	370,746	51.9%
West	134,331	17.4%	6,696	11.7%	127,635	17.9%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%

**Table 1m. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	529,595	68.7%	34,640	60.6%	494,955	69.3%
Suburban (population 2,500 - 49,999)	7,537	1.0%	709	1.2%	6,828	1.0%
Rural (population < 2,500)	233,785	30.3%	21,855	38.2%	211,930	29.7%
Zip Code Unknown or Urbanicity Not Available	7	0.0%	1	0.0%	6	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	68,019.2	26,550.0	60,152.9	22,108.2	68,649.7	26,829.5
Average Median Home Value <sup>3</sup>	257,584.7	197,296.3	202,269.9	137,068.9	262,018.2	201,037.0
Average Percent Unemployment <sup>3</sup>	5.3	2.7	5.8	3.1	5.3	2.6
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	770,924	100.0%	57,205	100.0%	713,719	100.0%
Median Home Value Available	770,924	100.0%	57,205	100.0%	713,719	100.0%
Percent Unemployment Available	770,924	100.0%	57,205	100.0%	713,719	100.0%
All SES Indicators Available	770,924	100.0%	57,205	100.0%	713,719	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	5,886	0.8%	766	1.3%	5,120	0.7%
Adult BMI 20-29	71,744	9.3%	7,031	12.3%	64,713	9.1%
Adult BMI 30-39	79,563	10.3%	8,566	15.0%	70,997	9.9%
Adult BMI 40 or greater	33,395	4.3%	4,046	7.1%	29,349	4.1%
Alcohol or Drug Abuse	18,895	2.5%	2,132	3.7%	16,763	2.3%
Alcohol Use Abuse	11,912	1.5%	1,286	2.2%	10,626	1.5%
Any Cancer	48,883	6.3%	6,776	11.8%	42,107	5.9%

**Table 1m. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Asthma	47,038	6.1%	4,825	8.4%	42,213	5.9%
Autoimmune Conditions	21,481	2.8%	2,594	4.5%	18,887	2.6%
Blood Stem Cell Transplant	54	0.0%	6	0.0%	48	0.0%
Chronic Kidney Disease	107,424	13.9%	17,136	30.0%	90,288	12.7%
Congestive Heart Failure	62,730	8.1%	10,636	18.6%	52,094	7.3%
Chronic Obstructive Pulmonary Disease (COPD)	75,921	9.8%	11,842	20.7%	64,079	9.0%
Coronary Artery Disease	121,447	15.8%	17,412	30.4%	104,035	14.6%
Cystic Fibrosis	101	0.0%	12	0.0%	89	0.0%
Diabetes Mellitus	174,771	22.7%	23,713	41.5%	151,058	21.2%
Drug Abuse Dependence	8,664	1.1%	1,060	1.9%	7,604	1.1%
HIV	2,432	0.3%	206	0.4%	2,226	0.3%
Hypertension	337,780	43.8%	40,947	71.6%	296,833	41.6%
Interstitial Lung Disease	8,957	1.2%	1,336	2.3%	7,621	1.1%
Liver Disease	31,122	4.0%	3,634	6.4%	27,488	3.9%
Neurologic Conditions	86,150	11.2%	12,399	21.7%	73,751	10.3%
Obesity	150,806	19.6%	16,580	29.0%	134,226	18.8%
Pulmonary Conditions	43,084	5.6%	6,671	11.7%	36,413	5.1%
Sickle Cell Disease	795	0.1%	127	0.2%	668	0.1%
Smoking	92,818	12.0%	12,576	22.0%	80,242	11.2%
Solid Organ or Stem Cell Transplant	596	0.1%	97	0.2%	499	0.1%
Solid Organ Transplant	542	0.1%	91	0.2%	451	0.1%
Vascular Disease	374,655	48.6%	44,313	77.5%	330,342	46.3%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	11,694	1.5%	1,791	3.1%	9,903	1.4%

**Table 1m. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Inhaled	43,597	5.7%	5,726	10.0%	37,871	5.3%
Glucocorticoids NonSystemic	91,594	11.9%	10,129	17.7%	81,465	11.4%
Glucocorticoids Ophthalmic	9,848	1.3%	1,075	1.9%	8,773	1.2%
Glucocorticoids Systemic	181,417	23.5%	19,180	33.5%	162,237	22.7%
Glucocorticoids Topical	44,155	5.7%	4,100	7.2%	40,055	5.6%
Immune Modulators	21,788	2.8%	3,048	5.3%	18,740	2.6%
Immunosuppressants	12,715	1.6%	1,688	3.0%	11,027	1.5%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	49,578	6.4%	5,333	9.3%	44,245	6.2%
Angiotensin receptor blockers (ARBs)	44,630	5.8%	4,833	8.4%	39,797	5.6%
Vasopressors	2,235	0.3%	124	0.2%	2,111	0.3%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.4	2.6	3.2	1.1	2.3
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	160,591	20.8%	18,681	32.7%	141,910	19.9%
Diarrhea	31,347	4.1%	7,116	12.4%	24,231	3.4%
Dyspnea/Short of Breath	162,847	21.1%	41,151	71.9%	121,696	17.1%
Fever	94,747	12.3%	15,172	26.5%	79,575	11.1%
Headache	9,208	1.2%	880	1.5%	8,328	1.2%
Malaise or Fatigue	99,622	12.9%	21,054	36.8%	78,568	11.0%
Multisystem Inflammatory Syndrome	99	0.0%	25	0.0%	74	0.0%
Myalgia	20,229	2.6%	1,707	3.0%	18,522	2.6%
Nasal Congestion	19,750	2.6%	718	1.3%	19,032	2.7%

**Table 1m. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Nausea or Vomiting	35,972	4.7%	7,100	12.4%	28,872	4.0%
Smell or Taste Disturbance	16,365	2.1%	780	1.4%	15,585	2.2%
Sore Throat	27,398	3.6%	1,070	1.9%	26,328	3.7%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.6	11.8	12.1	14.1	8.3	11.5
Mean number of emergency room encounters	0.5	1.7	1.0	2.5	0.4	1.6
Mean number of inpatient hospital encounters	0.1	0.4	0.2	0.7	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.3	0.1	0.4	0.0	0.3
Mean number of other ambulatory encounters	1.6	5.8	3.2	8.5	1.5	5.5
Mean number of filled prescriptions	12.6	16.3	19.8	19.6	12.0	15.9
Mean number of generics dispensed	5.4	5.1	8.3	5.9	5.2	5.0
Mean number of unique drug classes dispensed	5.1	4.7	7.8	5.3	4.9	4.6
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	640,261	83.1%	56,283	98.4%	583,978	81.8%

**Table 1m. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	84	0.0%	1	0.0%	83	0.0%
Intensive Care	44,099	5.7%	1,079	1.9%	43,020	6.0%
Mechanical Ventilation	15,191	2.0%	171	0.3%	15,020	2.1%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,544	0.3%	35	0.1%	2,509	0.4%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1n. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	128,167	N/A	74,146	N/A	54,021	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.8	13.0	72.2	12.2	71.2	14.0
Age						
0-5 years	70	0.1%	27	0.0%	43	0.1%
6-11 years	41	0.0%	15	0.0%	26	0.0%
12-18 years	169	0.1%	59	0.1%	110	0.2%
19-29 years	1,162	0.9%	408	0.6%	754	1.4%
30-39 years	2,502	2.0%	1,033	1.4%	1,469	2.7%
40-49 years	4,643	3.6%	2,468	3.3%	2,175	4.0%
50-64 years	20,680	16.1%	12,017	16.2%	8,663	16.0%
65-74 years	43,280	33.8%	25,792	34.8%	17,488	32.4%
≥ 75 years	55,620	43.4%	32,327	43.6%	23,293	43.1%
Sex						
Female	62,192	48.5%	33,699	45.4%	28,493	52.7%
Male	65,975	51.5%	40,447	54.6%	25,528	47.3%
Race <sup>2</sup>						
American Indian or Alaska Native	541	0.4%	302	0.4%	239	0.4%
Asian	1,844	1.4%	1,070	1.4%	774	1.4%
Black or African American	22,995	17.9%	13,766	18.6%	9,229	17.1%
Native Hawaiian or Other Pacific Islander	1,154	0.9%	725	1.0%	429	0.8%
Unknown	29,461	23.0%	16,664	22.5%	12,797	23.7%
White	72,172	56.3%	41,619	56.1%	30,553	56.6%



**Table 1n. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,507	4.3%	3,371	4.5%	2,136	4.0%
No	78,104	60.9%	45,961	62.0%	32,143	59.5%
Unknown	44,556	34.8%	24,814	33.5%	19,742	36.5%
Month-Year of Cohort Entry						
April 2020	6,117	4.8%	3,671	5.0%	2,446	4.5%
May 2020	3,284	2.6%	2,011	2.7%	1,273	2.4%
June 2020	3,853	3.0%	2,543	3.4%	1,310	2.4%
July 2020	10,577	8.3%	6,683	9.0%	3,894	7.2%
August 2020	7,102	5.5%	4,378	5.9%	2,724	5.0%
September 2020	5,256	4.1%	3,127	4.2%	2,129	3.9%
October 2020	9,184	7.2%	5,336	7.2%	3,848	7.1%
November 2020	19,254	15.0%	10,751	14.5%	8,503	15.7%
December 2020	25,859	20.2%	14,594	19.7%	11,265	20.9%
January 2021	21,992	17.2%	12,253	16.5%	9,739	18.0%
February 2021	9,446	7.4%	5,386	7.3%	4,060	7.5%
March 2021	6,243	4.9%	3,413	4.6%	2,830	5.2%
Census Bureau (CB) Region						
Midwest	28,436	22.2%	15,787	21.3%	12,649	23.4%
Northeast	12,005	9.4%	6,151	8.3%	5,854	10.8%
South	72,144	56.3%	43,035	58.0%	29,109	53.9%
West	15,582	12.2%	9,173	12.4%	6,409	11.9%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%

**Table 1n. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	81,580	63.7%	48,616	65.6%	32,964	61.0%
Suburban (population 2,500 - 49,999)	1,519	1.2%	864	1.2%	655	1.2%
Rural (population < 2,500)	45,066	35.2%	24,665	33.3%	20,401	37.8%
Zip Code Unknown or Urbanicity Not Available	2	0.0%	1	0.0%	1	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,642.1	21,790.3	59,004.5	21,340.4	60,517.3	22,356.0
Average Median Home Value <sup>3</sup>	199,835.9	131,672.4	196,110.6	124,647.7	204,949.2	140,308.2
Average Percent Unemployment <sup>3</sup>	5.8	3.1	5.9	3.1	5.7	3.1
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,167	100.0%	74,146	100.0%	54,021	100.0%
Median Home Value Available	128,167	100.0%	74,146	100.0%	54,021	100.0%
Percent Unemployment Available	128,167	100.0%	74,146	100.0%	54,021	100.0%
All SES Indicators Available	128,167	100.0%	74,146	100.0%	54,021	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,897	1.5%	1,140	1.5%	757	1.4%
Adult BMI 20-29	16,385	12.8%	9,755	13.2%	6,630	12.3%
Adult BMI 30-39	20,590	16.1%	12,493	16.8%	8,097	15.0%
Adult BMI 40 or greater	10,338	8.1%	6,378	8.6%	3,960	7.3%
Alcohol or Drug Abuse	5,479	4.3%	3,433	4.6%	2,046	3.8%
Alcohol Use Abuse	3,439	2.7%	2,201	3.0%	1,238	2.3%
Any Cancer	15,785	12.3%	9,414	12.7%	6,371	11.8%
Asthma	11,284	8.8%	6,387	8.6%	4,897	9.1%

**Table 1n. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	5,996	4.7%	3,532	4.8%	2,464	4.6%
Blood Stem Cell Transplant	16	0.0%	10	0.0%	6	0.0%
Chronic Kidney Disease	43,397	33.9%	27,342	36.9%	16,055	29.7%
Congestive Heart Failure	28,483	22.2%	18,472	24.9%	10,011	18.5%
Chronic Obstructive Pulmonary Disease (COPD)	30,446	23.8%	19,005	25.6%	11,441	21.2%
Coronary Artery Disease	44,283	34.6%	27,745	37.4%	16,538	30.6%
Cystic Fibrosis	22	0.0%	10	0.0%	12	0.0%
Diabetes Mellitus	57,693	45.0%	35,412	47.8%	22,281	41.2%
Drug Abuse Dependence	2,533	2.0%	1,517	2.0%	1,016	1.9%
HIV	502	0.4%	303	0.4%	199	0.4%
Hypertension	96,573	75.3%	57,423	77.4%	39,150	72.5%
Interstitial Lung Disease	3,959	3.1%	2,635	3.6%	1,324	2.5%
Liver Disease	9,177	7.2%	5,614	7.6%	3,563	6.6%
Neurologic Conditions	28,489	22.2%	16,417	22.1%	12,072	22.3%
Obesity	40,071	31.3%	24,170	32.6%	15,901	29.4%
Pulmonary Conditions	28,943	22.6%	17,939	24.2%	11,004	20.4%
Sickle Cell Disease	305	0.2%	180	0.2%	125	0.2%
Smoking	32,021	25.0%	19,430	26.2%	12,591	23.3%
Solid Organ or Stem Cell Transplant	249	0.2%	167	0.2%	82	0.2%
Solid Organ Transplant	233	0.2%	157	0.2%	76	0.1%
Vascular Disease	104,226	81.3%	61,752	83.3%	42,474	78.6%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,150	3.2%	2,480	3.3%	1,670	3.1%
Glucocorticoids Inhaled	14,304	11.2%	8,670	11.7%	5,634	10.4%

**Table 1n. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	24,189	18.9%	14,498	19.6%	9,691	17.9%
Glucocorticoids Ophthalmic	2,492	1.9%	1,509	2.0%	983	1.8%
Glucocorticoids Systemic	50,415	39.3%	29,832	40.2%	20,583	38.1%
Glucocorticoids Topical	9,431	7.4%	5,605	7.6%	3,826	7.1%
Immune Modulators	7,020	5.5%	4,252	5.7%	2,768	5.1%
Immunosuppressants	3,881	3.0%	2,337	3.2%	1,544	2.9%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	11,574	9.0%	6,645	9.0%	4,929	9.1%
Angiotensin receptor blockers (ARBs)	10,880	8.5%	6,458	8.7%	4,422	8.2%
Vasopressors	2,033	1.6%	1,911	2.6%	122	0.2%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.3	3.5	2.7	3.2
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	31,342	24.5%	17,565	23.7%	13,777	25.5%
Diarrhea	13,217	10.3%	7,080	9.5%	6,137	11.4%
Dyspnea/Short of Breath	96,964	75.7%	59,136	79.8%	37,828	70.0%
Fever	29,325	22.9%	17,642	23.8%	11,683	21.6%
Headache	1,562	1.2%	891	1.2%	671	1.2%
Malaise or Fatigue	42,856	33.4%	24,309	32.8%	18,547	34.3%
Multisystem Inflammatory Syndrome	86	0.1%	56	0.1%	30	0.1%
Myalgia	2,052	1.6%	1,008	1.4%	1,044	1.9%
Nasal Congestion	659	0.5%	347	0.5%	312	0.6%
Nausea or Vomiting	13,031	10.2%	7,106	9.6%	5,925	11.0%

**Table 1n. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Smell or Taste Disturbance	1,106	0.9%	546	0.7%	560	1.0%
Sore Throat	1,116	0.9%	594	0.8%	522	1.0%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	16.9	14.6	18.8	12.4	13.8
Mean number of emergency room encounters	1.3	2.7	1.4	2.8	1.3	2.6
Mean number of inpatient hospital encounters	0.3	0.7	0.3	0.8	0.2	0.7
Mean number of non-acute institutional encounters	0.1	0.5	0.1	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.7	9.2	3.9	9.6	3.3	8.5
Mean number of filled prescriptions	21.0	20.4	21.6	20.8	20.1	19.7
Mean number of generics dispensed	9.0	6.1	9.3	6.2	8.6	5.9
Mean number of unique drug classes dispensed	8.4	5.5	8.7	5.6	8.0	5.4
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	128,167	100.0%	74,146	100.0%	54,021	100.0%

**Table 1n. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	164	0.1%	164	0.2%	0	0.0%
Intensive Care	68,362	53.3%	68,362	92.2%	0	0.0%
Mechanical Ventilation	22,960	17.9%	22,960	31.0%	0	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,610	2.8%	3,610	4.9%	0	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1o. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	128,167	N/A	18,332	N/A	109,835	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.8	13.0	76.5	10.0	71.0	13.3
Age						
0-5 years	70	0.1%	1	0.0%	69	0.1%
6-11 years	41	0.0%	0	0.0%	41	0.0%
12-18 years	169	0.1%	1	0.0%	168	0.2%
19-29 years	1,162	0.9%	9	0.0%	1,153	1.0%
30-39 years	2,502	2.0%	45	0.2%	2,457	2.2%
40-49 years	4,643	3.6%	193	1.1%	4,450	4.1%
50-64 years	20,680	16.1%	1,654	9.0%	19,026	17.3%
65-74 years	43,280	33.8%	5,861	32.0%	37,419	34.1%
≥ 75 years	55,620	43.4%	10,568	57.6%	45,052	41.0%
Sex						
Female	62,192	48.5%	7,462	40.7%	54,730	49.8%
Male	65,975	51.5%	10,870	59.3%	55,105	50.2%
Race <sup>2</sup>						
American Indian or Alaska Native	541	0.4%	93	0.5%	448	0.4%
Asian	1,844	1.4%	272	1.5%	1,572	1.4%
Black or African American	22,995	17.9%	3,291	18.0%	19,704	17.9%
Native Hawaiian or Other Pacific Islander	1,154	0.9%	204	1.1%	950	0.9%
Unknown	29,461	23.0%	3,474	19.0%	25,987	23.7%
White	72,172	56.3%	10,998	60.0%	61,174	55.7%

**Table 1o. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,507	4.3%	722	3.9%	4,785	4.4%
No	78,104	60.9%	12,102	66.0%	66,002	60.1%
Unknown	44,556	34.8%	5,508	30.0%	39,048	35.6%
Month-Year of Cohort Entry						
April 2020	6,117	4.8%	1,258	6.9%	4,859	4.4%
May 2020	3,284	2.6%	491	2.7%	2,793	2.5%
June 2020	3,853	3.0%	510	2.8%	3,343	3.0%
July 2020	10,577	8.3%	1,549	8.4%	9,028	8.2%
August 2020	7,102	5.5%	973	5.3%	6,129	5.6%
September 2020	5,256	4.1%	724	3.9%	4,532	4.1%
October 2020	9,184	7.2%	1,236	6.7%	7,948	7.2%
November 2020	19,254	15.0%	2,842	15.5%	16,412	14.9%
December 2020	25,859	20.2%	3,938	21.5%	21,921	20.0%
January 2021	21,992	17.2%	3,195	17.4%	18,797	17.1%
February 2021	9,446	7.4%	1,209	6.6%	8,237	7.5%
March 2021	6,243	4.9%	407	2.2%	5,836	5.3%
Census Bureau (CB) Region						
Midwest	28,436	22.2%	4,046	22.1%	24,390	22.2%
Northeast	12,005	9.4%	1,866	10.2%	10,139	9.2%
South	72,144	56.3%	10,222	55.8%	61,922	56.4%
West	15,582	12.2%	2,198	12.0%	13,384	12.2%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%



**Table 1o. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	81,580	63.7%	11,287	61.6%	70,293	64.0%
Suburban (population 2,500 - 49,999)	1,519	1.2%	215	1.2%	1,304	1.2%
Rural (population < 2,500)	45,066	35.2%	6,830	37.3%	38,236	34.8%
Zip Code Unknown or Urbanicity Not Available	2	0.0%	0	0.0%	2	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,642.1	21,790.3	57,871.5	20,965.6	59,937.6	21,915.4
Average Median Home Value <sup>3</sup>	199,835.9	131,672.4	193,260.4	131,205.9	200,933.4	131,737.4
Average Percent Unemployment <sup>3</sup>	5.8	3.1	6.0	3.2	5.8	3.1
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,167	100.0%	18,332	100.0%	109,835	100.0%
Median Home Value Available	128,167	100.0%	18,332	100.0%	109,835	100.0%
Percent Unemployment Available	128,167	100.0%	18,332	100.0%	109,835	100.0%
All SES Indicators Available	128,167	100.0%	18,332	100.0%	109,835	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,897	1.5%	360	2.0%	1,537	1.4%
Adult BMI 20-29	16,385	12.8%	2,509	13.7%	13,876	12.6%
Adult BMI 30-39	20,590	16.1%	3,115	17.0%	17,475	15.9%
Adult BMI 40 or greater	10,338	8.1%	1,389	7.6%	8,949	8.1%
Alcohol or Drug Abuse	5,479	4.3%	795	4.3%	4,684	4.3%
Alcohol Use Abuse	3,439	2.7%	565	3.1%	2,874	2.6%
Any Cancer	15,785	12.3%	2,758	15.0%	13,027	11.9%
Asthma	11,284	8.8%	1,365	7.4%	9,919	9.0%

**Table 1o. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	5,996	4.7%	872	4.8%	5,124	4.7%
Blood Stem Cell Transplant	16	0.0%	4	0.0%	12	0.0%
Chronic Kidney Disease	43,397	33.9%	7,926	43.2%	35,471	32.3%
Congestive Heart Failure	28,483	22.2%	5,501	30.0%	22,982	20.9%
Chronic Obstructive Pulmonary Disease (COPD)	30,446	23.8%	5,166	28.2%	25,280	23.0%
Coronary Artery Disease	44,283	34.6%	7,890	43.0%	36,393	33.1%
Cystic Fibrosis	22	0.0%	2	0.0%	20	0.0%
Diabetes Mellitus	57,693	45.0%	9,312	50.8%	48,381	44.0%
Drug Abuse Dependence	2,533	2.0%	279	1.5%	2,254	2.1%
HIV	502	0.4%	60	0.3%	442	0.4%
Hypertension	96,573	75.3%	15,039	82.0%	81,534	74.2%
Interstitial Lung Disease	3,959	3.1%	861	4.7%	3,098	2.8%
Liver Disease	9,177	7.2%	1,489	8.1%	7,688	7.0%
Neurologic Conditions	28,489	22.2%	4,926	26.9%	23,563	21.5%
Obesity	40,071	31.3%	5,788	31.6%	34,283	31.2%
Pulmonary Conditions	28,943	22.6%	4,809	26.2%	24,134	22.0%
Sickle Cell Disease	305	0.2%	37	0.2%	268	0.2%
Smoking	32,021	25.0%	5,229	28.5%	26,792	24.4%
Solid Organ or Stem Cell Transplant	249	0.2%	34	0.2%	215	0.2%
Solid Organ Transplant	233	0.2%	30	0.2%	203	0.2%
Vascular Disease	104,226	81.3%	16,108	87.9%	88,118	80.2%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,150	3.2%	735	4.0%	3,415	3.1%
Glucocorticoids Inhaled	14,304	11.2%	2,147	11.7%	12,157	11.1%

**Table 1o. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	24,189	18.9%	3,707	20.2%	20,482	18.6%
Glucocorticoids Ophthalmic	2,492	1.9%	408	2.2%	2,084	1.9%
Glucocorticoids Systemic	50,415	39.3%	7,518	41.0%	42,897	39.1%
Glucocorticoids Topical	9,431	7.4%	1,480	8.1%	7,951	7.2%
Immune Modulators	7,020	5.5%	1,256	6.9%	5,764	5.2%
Immunosuppressants	3,881	3.0%	617	3.4%	3,264	3.0%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	11,574	9.0%	1,668	9.1%	9,906	9.0%
Angiotensin receptor blockers (ARBs)	10,880	8.5%	1,563	8.5%	9,317	8.5%
Vasopressors	2,033	1.6%	1,095	6.0%	938	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.9	3.7	2.9	3.3
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	31,342	24.5%	3,739	20.4%	27,603	25.1%
Diarrhea	13,217	10.3%	1,392	7.6%	11,825	10.8%
Dyspnea/Short of Breath	96,964	75.7%	15,450	84.3%	81,514	74.2%
Fever	29,325	22.9%	4,216	23.0%	25,109	22.9%
Headache	1,562	1.2%	150	0.8%	1,412	1.3%
Malaise or Fatigue	42,856	33.4%	5,349	29.2%	37,507	34.1%
Multisystem Inflammatory Syndrome	86	0.1%	8	0.0%	78	0.1%
Myalgia	2,052	1.6%	149	0.8%	1,903	1.7%
Nasal Congestion	659	0.5%	56	0.3%	603	0.5%
Nausea or Vomiting	13,031	10.2%	1,274	6.9%	11,757	10.7%
Smell or Taste Disturbance	1,106	0.9%	75	0.4%	1,031	0.9%

**Table 1o. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sore Throat	1,116	0.9%	99	0.5%	1,017	0.9%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	16.9	15.5	18.9	13.4	16.6
Mean number of emergency room encounters	1.3	2.7	1.4	2.8	1.3	2.7
Mean number of inpatient hospital encounters	0.3	0.7	0.4	0.8	0.3	0.7
Mean number of non-acute institutional encounters	0.1	0.5	0.2	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.7	9.2	4.4	10.0	3.6	9.0
Mean number of filled prescriptions	21.0	20.4	23.6	22.5	20.5	19.9
Mean number of generics dispensed	9.0	6.1	9.7	6.1	8.8	6.0
Mean number of unique drug classes dispensed	8.4	5.5	9.1	5.6	8.3	5.5
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	128,167	100.0%	18,332	100.0%	109,835	100.0%

**Table 1o. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	164	0.1%	49	0.3%	115	0.1%
Intensive Care	68,362	53.3%	15,123	82.5%	53,239	48.5%
Mechanical Ventilation	22,960	17.9%	11,471	62.6%	11,489	10.5%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,610	2.8%	1,238	6.8%	2,372	2.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1p. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	128,167	N/A	18,784	N/A	109,383	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.8	13.0	76.7	10.0	70.9	13.3
Age						
0-5 years	70	0.1%	1	0.0%	69	0.1%
6-11 years	41	0.0%	0	0.0%	41	0.0%
12-18 years	169	0.1%	1	0.0%	168	0.2%
19-29 years	1,162	0.9%	9	0.0%	1,153	1.1%
30-39 years	2,502	2.0%	45	0.2%	2,457	2.2%
40-49 years	4,643	3.6%	194	1.0%	4,449	4.1%
50-64 years	20,680	16.1%	1,673	8.9%	19,007	17.4%
65-74 years	43,280	33.8%	5,936	31.6%	37,344	34.1%
≥ 75 years	55,620	43.4%	10,925	58.2%	44,695	40.9%
Sex						
Female	62,192	48.5%	7,664	40.8%	54,528	49.9%
Male	65,975	51.5%	11,120	59.2%	54,855	50.1%
Race <sup>2</sup>						
American Indian or Alaska Native	541	0.4%	94	0.5%	447	0.4%
Asian	1,844	1.4%	277	1.5%	1,567	1.4%
Black or African American	22,995	17.9%	3,338	17.8%	19,657	18.0%
Native Hawaiian or Other Pacific Islander	1,154	0.9%	207	1.1%	947	0.9%
Unknown	29,461	23.0%	3,546	18.9%	25,915	23.7%
White	72,172	56.3%	11,322	60.3%	60,850	55.6%

**Table 1p. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,507	4.3%	741	3.9%	4,766	4.4%
No	78,104	60.9%	12,429	66.2%	65,675	60.0%
Unknown	44,556	34.8%	5,614	29.9%	38,942	35.6%
Month-Year of Cohort Entry						
April 2020	6,117	4.8%	1,288	6.9%	4,829	4.4%
May 2020	3,284	2.6%	517	2.8%	2,767	2.5%
June 2020	3,853	3.0%	518	2.8%	3,335	3.0%
July 2020	10,577	8.3%	1,570	8.4%	9,007	8.2%
August 2020	7,102	5.5%	991	5.3%	6,111	5.6%
September 2020	5,256	4.1%	740	3.9%	4,516	4.1%
October 2020	9,184	7.2%	1,267	6.7%	7,917	7.2%
November 2020	19,254	15.0%	2,931	15.6%	16,323	14.9%
December 2020	25,859	20.2%	4,037	21.5%	21,822	20.0%
January 2021	21,992	17.2%	3,281	17.5%	18,711	17.1%
February 2021	9,446	7.4%	1,233	6.6%	8,213	7.5%
March 2021	6,243	4.9%	411	2.2%	5,832	5.3%
Census Bureau (CB) Region						
Midwest	28,436	22.2%	4,151	22.1%	24,285	22.2%
Northeast	12,005	9.4%	1,915	10.2%	10,090	9.2%
South	72,144	56.3%	10,401	55.4%	61,743	56.4%
West	15,582	12.2%	2,317	12.3%	13,265	12.1%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%

**Table 1p. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	81,580	63.7%	11,581	61.7%	69,999	64.0%
Suburban (population 2,500 - 49,999)	1,519	1.2%	222	1.2%	1,297	1.2%
Rural (population < 2,500)	45,066	35.2%	6,981	37.2%	38,085	34.8%
Zip Code Unknown or Urbanicity Not Available	2	0.0%	0	0.0%	2	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,642.1	21,790.3	57,983.0	20,991.7	59,927.0	21,915.2
Average Median Home Value <sup>3</sup>	199,835.9	131,672.4	193,918.7	131,034.5	200,852.1	131,768.3
Average Percent Unemployment <sup>3</sup>	5.8	3.1	6.0	3.2	5.8	3.1
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,167	100.0%	18,784	100.0%	109,383	100.0%
Median Home Value Available	128,167	100.0%	18,784	100.0%	109,383	100.0%
Percent Unemployment Available	128,167	100.0%	18,784	100.0%	109,383	100.0%
All SES Indicators Available	128,167	100.0%	18,784	100.0%	109,383	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,897	1.5%	374	2.0%	1,523	1.4%
Adult BMI 20-29	16,385	12.8%	2,564	13.6%	13,821	12.6%
Adult BMI 30-39	20,590	16.1%	3,147	16.8%	17,443	15.9%
Adult BMI 40 or greater	10,338	8.1%	1,400	7.5%	8,938	8.2%
Alcohol or Drug Abuse	5,479	4.3%	823	4.4%	4,656	4.3%
Alcohol Use Abuse	3,439	2.7%	588	3.1%	2,851	2.6%



**Table 1p. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Any Cancer	15,785	12.3%	2,826	15.0%	12,959	11.8%
Asthma	11,284	8.8%	1,381	7.4%	9,903	9.1%
Autoimmune Conditions	5,996	4.7%	891	4.7%	5,105	4.7%
Blood Stem Cell Transplant	16	0.0%	4	0.0%	12	0.0%
Chronic Kidney Disease	43,397	33.9%	8,139	43.3%	35,258	32.2%
Congestive Heart Failure	28,483	22.2%	5,672	30.2%	22,811	20.9%
Chronic Obstructive Pulmonary Disease (COPD)	30,446	23.8%	5,309	28.3%	25,137	23.0%
Coronary Artery Disease	44,283	34.6%	8,090	43.1%	36,193	33.1%
Cystic Fibrosis	22	0.0%	2	0.0%	20	0.0%
Diabetes Mellitus	57,693	45.0%	9,520	50.7%	48,173	44.0%
Drug Abuse Dependence	2,533	2.0%	286	1.5%	2,247	2.1%
HIV	502	0.4%	60	0.3%	442	0.4%
Hypertension	96,573	75.3%	15,413	82.1%	81,160	74.2%
Interstitial Lung Disease	3,959	3.1%	881	4.7%	3,078	2.8%
Liver Disease	9,177	7.2%	1,527	8.1%	7,650	7.0%
Neurologic Conditions	28,489	22.2%	5,121	27.3%	23,368	21.4%
Obesity	40,071	31.3%	5,853	31.2%	34,218	31.3%
Pulmonary Conditions	28,943	22.6%	4,943	26.3%	24,000	21.9%
Sickle Cell Disease	305	0.2%	37	0.2%	268	0.2%
Smoking	32,021	25.0%	5,368	28.6%	26,653	24.4%
Solid Organ or Stem Cell Transplant	249	0.2%	34	0.2%	215	0.2%
Solid Organ Transplant	233	0.2%	30	0.2%	203	0.2%
Vascular Disease	104,226	81.3%	16,518	87.9%	87,708	80.2%

**Table 1p. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,150	3.2%	750	4.0%	3,400	3.1%
Glucocorticoids Inhaled	14,304	11.2%	2,192	11.7%	12,112	11.1%
Glucocorticoids NonSystemic	24,189	18.9%	3,791	20.2%	20,398	18.6%
Glucocorticoids Ophthalmic	2,492	1.9%	415	2.2%	2,077	1.9%
Glucocorticoids Systemic	50,415	39.3%	7,661	40.8%	42,754	39.1%
Glucocorticoids Topical	9,431	7.4%	1,514	8.1%	7,917	7.2%
Immune Modulators	7,020	5.5%	1,288	6.9%	5,732	5.2%
Immunosuppressants	3,881	3.0%	630	3.4%	3,251	3.0%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	11,574	9.0%	1,717	9.1%	9,857	9.0%
Angiotensin receptor blockers (ARBs)	10,880	8.5%	1,602	8.5%	9,278	8.5%
Vasopressors	2,033	1.6%	1,097	5.8%	936	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.9	3.7	2.9	3.3
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	31,342	24.5%	3,826	20.4%	27,516	25.2%
Diarrhea	13,217	10.3%	1,432	7.6%	11,785	10.8%
Dyspnea/Short of Breath	96,964	75.7%	15,754	83.9%	81,210	74.2%
Fever	29,325	22.9%	4,298	22.9%	25,027	22.9%
Headache	1,562	1.2%	152	0.8%	1,410	1.3%
Malaise or Fatigue	42,856	33.4%	5,586	29.7%	37,270	34.1%
Multisystem Inflammatory Syndrome	86	0.1%	8	0.0%	78	0.1%

**Table 1p. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Myalgia	2,052	1.6%	151	0.8%	1,901	1.7%
Nasal Congestion	659	0.5%	58	0.3%	601	0.5%
Nausea or Vomiting	13,031	10.2%	1,320	7.0%	11,711	10.7%
Smell or Taste Disturbance	1,106	0.9%	77	0.4%	1,029	0.9%
Sore Throat	1,116	0.9%	101	0.5%	1,015	0.9%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	16.9	15.5	18.8	13.4	16.6
Mean number of emergency room encounters	1.3	2.7	1.4	2.8	1.3	2.7
Mean number of inpatient hospital encounters	0.3	0.7	0.4	0.8	0.3	0.7
Mean number of non-acute institutional encounters	0.1	0.5	0.2	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.7	9.2	4.5	10.1	3.5	9.0
Mean number of filled prescriptions	21.0	20.4	23.7	22.6	20.5	19.9
Mean number of generics dispensed	9.0	6.1	9.7	6.1	8.8	6.0
Mean number of unique drug classes dispensed	8.4	5.5	9.1	5.5	8.3	5.5
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	128,167	100.0%	18,784	100.0%	109,383	100.0%

**Table 1p. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	164	0.1%	50	0.3%	114	0.1%
Intensive Care	68,362	53.3%	15,356	81.8%	53,006	48.5%
Mechanical Ventilation	22,960	17.9%	11,514	61.3%	11,446	10.5%
Renal Replacement Therapy and Acute Renal Failure	3,610	2.8%	1,247	6.6%	2,363	2.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	770,924	N/A	529,595	N/A	7,537	N/A
<b>Demographic Characteristics</b>						
Age (years)	56.1	19.5	53.9	19.9	60.9	18.8
Age						
0-5 years	6,786	0.9%	5,487	1.0%	51	0.7%
6-11 years	10,352	1.3%	8,220	1.6%	70	0.9%
12-18 years	26,823	3.5%	20,492	3.9%	169	2.2%
19-29 years	77,963	10.1%	61,354	11.6%	522	6.9%
30-39 years	77,074	10.0%	60,834	11.5%	509	6.8%
40-49 years	80,476	10.4%	60,299	11.4%	607	8.1%
50-64 years	151,575	19.7%	104,476	19.7%	1,544	20.5%
65-74 years	185,123	24.0%	114,292	21.6%	2,182	29.0%
≥ 75 years	154,752	20.1%	94,141	17.8%	1,883	25.0%
Sex						
Female	417,159	54.1%	287,183	54.2%	4,172	55.4%
Male	353,765	45.9%	242,412	45.8%	3,365	44.6%
Race <sup>2</sup>						
American Indian or Alaska Native	2,740	0.4%	1,585	0.3%	24	0.3%
Asian	14,519	1.9%	13,434	2.5%	36	0.5%
Black or African American	76,638	9.9%	56,679	10.7%	955	12.7%
Native Hawaiian or Other Pacific Islander	4,163	0.5%	3,300	0.6%	22	0.3%
Unknown	316,780	41.1%	235,694	44.5%	2,545	33.8%
White	356,084	46.2%	218,903	41.3%	3,955	52.5%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	233,785	N/A	7	N/A
<b>Demographic Characteristics</b>				
Age (years)	60.8	18.3	66.7	11.1
Age				
0-5 years	1,248	0.5%	0	0.0%
6-11 years	2,062	0.9%	0	0.0%
12-18 years	6,162	2.6%	0	0.0%
19-29 years	16,087	6.9%	0	0.0%
30-39 years	15,731	6.7%	0	0.0%
40-49 years	19,569	8.4%	1	14.3%
50-64 years	45,553	19.5%	2	28.6%
65-74 years	68,646	29.4%	3	42.9%
≥ 75 years	58,727	25.1%	1	14.3%
Sex				
Female	125,800	53.8%	4	57.1%
Male	107,985	46.2%	3	42.9%
Race <sup>2</sup>				
American Indian or Alaska Native	1,131	0.5%	0	0.0%
Asian	1,049	0.4%	0	0.0%
Black or African American	19,003	8.1%	1	14.3%
Native Hawaiian or Other Pacific Islander	841	0.4%	0	0.0%
Unknown	78,538	33.6%	3	42.9%
White	133,223	57.0%	3	42.9%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	48,004	6.2%	41,001	7.7%	172	2.3%
No	280,330	36.4%	162,096	30.6%	3,616	48.0%
Unknown	442,590	57.4%	326,498	61.7%	3,749	49.7%
Month-Year of Cohort Entry						
April 2020	21,923	2.8%	18,177	3.4%	169	2.2%
May 2020	18,459	2.4%	14,792	2.8%	129	1.7%
June 2020	30,583	4.0%	24,093	4.5%	224	3.0%
July 2020	63,350	8.2%	47,002	8.9%	600	8.0%
August 2020	39,647	5.1%	27,482	5.2%	388	5.1%
September 2020	35,410	4.6%	23,483	4.4%	329	4.4%
October 2020	60,467	7.8%	39,169	7.4%	585	7.8%
November 2020	121,808	15.8%	79,586	15.0%	1,221	16.2%
December 2020	159,316	20.7%	103,680	19.6%	1,745	23.2%
January 2021	128,297	16.6%	86,416	16.3%	1,354	18.0%
February 2021	52,106	6.8%	36,453	6.9%	488	6.5%
March 2021	39,558	5.1%	29,262	5.5%	305	4.0%
Census Bureau (CB) Region						
Midwest	143,876	18.7%	90,630	17.1%	1,190	15.8%
Northeast	90,764	11.8%	76,736	14.5%	699	9.3%
South	401,953	52.1%	254,383	48.0%	5,162	68.5%
West	134,331	17.4%	107,846	20.4%	486	6.4%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin				
Yes	6,829	2.9%	2	28.6%
No	114,614	49.0%	4	57.1%
Unknown	112,342	48.1%	1	14.3%
Month-Year of Cohort Entry				
April 2020	3,577	1.5%	0	0.0%
May 2020	3,538	1.5%	0	0.0%
June 2020	6,266	2.7%	0	0.0%
July 2020	15,748	6.7%	0	0.0%
August 2020	11,777	5.0%	0	0.0%
September 2020	11,598	5.0%	0	0.0%
October 2020	20,713	8.9%	0	0.0%
November 2020	41,000	17.5%	1	14.3%
December 2020	53,888	23.1%	3	42.9%
January 2021	40,525	17.3%	2	28.6%
February 2021	15,164	6.5%	1	14.3%
March 2021	9,991	4.3%	0	0.0%
Census Bureau (CB) Region				
Midwest	52,056	22.3%	0	0.0%
Northeast	13,329	5.7%	0	0.0%
South	142,407	60.9%	1	14.3%
West	25,993	11.1%	6	85.7%
CB Region (Invalid)	0	0.0%	0	0.0%



**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	529,595	68.7%	529,595	100.0%	0	0.0%
Suburban (population 2,500 - 49,999)	7,537	1.0%	0	0.0%	7,537	100.0%
Rural (population < 2,500)	233,785	30.3%	0	0.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	7	0.0%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	68,019.2	26,550.0	72,388.0	28,522.4	53,102.1	17,781.1
Average Median Home Value <sup>3</sup>	257,584.7	197,296.3	297,724.1	220,335.5	170,322.3	117,615.2
Average Percent Unemployment <sup>3</sup>	5.3	2.7	5.3	2.5	6.2	2.7
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	770,924	100.0%	529,595	100.0%	7,537	100.0%
Median Home Value Available	770,924	100.0%	529,595	100.0%	7,537	100.0%
Percent Unemployment Available	770,924	100.0%	529,595	100.0%	7,537	100.0%
All SES Indicators Available	770,924	100.0%	529,595	100.0%	7,537	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	5,886	0.8%	4,013	0.8%	82	1.1%
Adult BMI 20-29	71,744	9.3%	48,930	9.2%	778	10.3%
Adult BMI 30-39	79,563	10.3%	50,763	9.6%	973	12.9%
Adult BMI 40 or greater	33,395	4.3%	20,446	3.9%	450	6.0%
Alcohol or Drug Abuse	18,895	2.5%	13,057	2.5%	237	3.1%
Alcohol Use Abuse	11,912	1.5%	8,436	1.6%	152	2.0%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Missing)	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%
Urbanicity				
Urban (population >= 50,000)	0	0.0%	0	0.0%
Suburban (population 2,500 - 49,999)	0	0.0%	0	0.0%
Rural (population < 2,500)	233,785	100.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	7	100.0%
Proxies for Socioeconomic Status (SES)				
Average Median Household Income <sup>3</sup>	58,603.5	19,390.3	64,095.3	17,305.3
Average Median Home Value <sup>3</sup>	169,467.4	92,640.3	341,000.0	194,344.7
Average Percent Unemployment <sup>3</sup>	5.3	3.0	7.3	4.1
Missingness in Proxies for Socioeconomic Status (SES)				
Median Household Income Available	233,785	100.0%	7	100.0%
Median Home Value Available	233,785	100.0%	7	100.0%
Percent Unemployment Available	233,785	100.0%	7	100.0%
All SES Indicators Available	233,785	100.0%	7	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>				
Adult BMI 19.9 or less	1,791	0.8%	0	0.0%
Adult BMI 20-29	22,035	9.4%	1	14.3%
Adult BMI 30-39	27,826	11.9%	1	14.3%
Adult BMI 40 or greater	12,497	5.3%	2	28.6%
Alcohol or Drug Abuse	5,601	2.4%	0	0.0%
Alcohol Use Abuse	3,324	1.4%	0	0.0%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Any Cancer	48,883	6.3%	31,856	6.0%	592	7.9%
Asthma	47,038	6.1%	32,075	6.1%	503	6.7%
Autoimmune Conditions	21,481	2.8%	13,510	2.6%	273	3.6%
Blood Stem Cell Transplant	54	0.0%	38	0.0%	1	0.0%
Chronic Kidney Disease	107,424	13.9%	69,478	13.1%	1,255	16.7%
Congestive Heart Failure	62,730	8.1%	38,830	7.3%	771	10.2%
Chronic Obstructive Pulmonary Disease (COPD)	75,921	9.8%	44,472	8.4%	1,060	14.1%
Coronary Artery Disease	121,447	15.8%	75,863	14.3%	1,457	19.3%
Cystic Fibrosis	101	0.0%	74	0.0%	2	0.0%
Diabetes Mellitus	174,771	22.7%	109,599	20.7%	2,087	27.7%
Drug Abuse Dependence	8,664	1.1%	5,847	1.1%	112	1.5%
HIV	2,432	0.3%	2,103	0.4%	18	0.2%
Hypertension	337,780	43.8%	209,703	39.6%	4,147	55.0%
Interstitial Lung Disease	8,957	1.2%	5,781	1.1%	102	1.4%
Liver Disease	31,122	4.0%	20,905	3.9%	342	4.5%
Neurologic Conditions	86,150	11.2%	54,348	10.3%	1,106	14.7%
Obesity	150,806	19.6%	96,112	18.1%	1,779	23.6%
Pulmonary Conditions	43,084	5.6%	27,486	5.2%	515	6.8%
Sickle Cell Disease	795	0.1%	645	0.1%	8	0.1%
Smoking	92,818	12.0%	55,540	10.5%	1,263	16.8%
Solid Organ or Stem Cell Transplant	596	0.1%	426	0.1%	4	0.1%
Solid Organ Transplant	542	0.1%	388	0.1%	3	0.0%
Vascular Disease	374,655	48.6%	234,791	44.3%	4,496	59.7%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Any Cancer	16,433	7.0%	2	28.6%
Asthma	14,459	6.2%	1	14.3%
Autoimmune Conditions	7,697	3.3%	1	14.3%
Blood Stem Cell Transplant	15	0.0%	0	0.0%
Chronic Kidney Disease	36,690	15.7%	1	14.3%
Congestive Heart Failure	23,129	9.9%	0	0.0%
Chronic Obstructive Pulmonary Disease (COPD)	30,389	13.0%	0	0.0%
Coronary Artery Disease	44,127	18.9%	0	0.0%
Cystic Fibrosis	25	0.0%	0	0.0%
Diabetes Mellitus	63,084	27.0%	1	14.3%
Drug Abuse Dependence	2,705	1.2%	0	0.0%
HIV	311	0.1%	0	0.0%
Hypertension	123,927	53.0%	3	42.9%
Interstitial Lung Disease	3,074	1.3%	0	0.0%
Liver Disease	9,875	4.2%	0	0.0%
Neurologic Conditions	30,695	13.1%	1	14.3%
Obesity	52,911	22.6%	4	57.1%
Pulmonary Conditions	15,083	6.5%	0	0.0%
Sickle Cell Disease	142	0.1%	0	0.0%
Smoking	36,015	15.4%	0	0.0%
Solid Organ or Stem Cell Transplant	166	0.1%	0	0.0%
Solid Organ Transplant	151	0.1%	0	0.0%
Vascular Disease	135,365	57.9%	3	42.9%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	11,694	1.5%	7,375	1.4%	157	2.1%
Glucocorticoids Inhaled	43,597	5.7%	27,868	5.3%	488	6.5%
Glucocorticoids NonSystemic	91,594	11.9%	60,772	11.5%	990	13.1%
Glucocorticoids Ophthalmic	9,848	1.3%	6,408	1.2%	135	1.8%
Glucocorticoids Systemic	181,417	23.5%	112,758	21.3%	2,157	28.6%
Glucocorticoids Topical	44,155	5.7%	30,365	5.7%	432	5.7%
Immune Modulators	21,788	2.8%	14,186	2.7%	252	3.3%
Immunosuppressants	12,715	1.6%	8,052	1.5%	164	2.2%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	49,578	6.4%	30,108	5.7%	610	8.1%
Angiotensin receptor blockers (ARBs)	44,630	5.8%	28,976	5.5%	525	7.0%
Vasopressors	2,235	0.3%	1,453	0.3%	32	0.4%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.2	2.4	1.2	2.3	1.6	2.7
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	160,591	20.8%	103,046	19.5%	1,765	23.4%
Diarrhea	31,347	4.1%	19,443	3.7%	358	4.7%
Dyspnea/Short of Breath	162,847	21.1%	102,145	19.3%	1,916	25.4%
Fever	94,747	12.3%	61,943	11.7%	1,010	13.4%
Headache	9,208	1.2%	6,566	1.2%	96	1.3%
Malaise or Fatigue	99,622	12.9%	62,941	11.9%	1,190	15.8%
Multisystem Inflammatory Syndrome	99	0.0%	77	0.0%	2	0.0%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>				
Chemotherapy	4,161	1.8%	1	14.3%
Glucocorticoids Inhaled	15,240	6.5%	1	14.3%
Glucocorticoids NonSystemic	29,831	12.8%	1	14.3%
Glucocorticoids Ophthalmic	3,305	1.4%	0	0.0%
Glucocorticoids Systemic	66,500	28.4%	2	28.6%
Glucocorticoids Topical	13,357	5.7%	1	14.3%
Immune Modulators	7,349	3.1%	1	14.3%
Immunosuppressants	4,498	1.9%	1	14.3%
<b>Concurrent Use Of (-30, 0)</b>				
Angiotensin-converting enzyme (ACE) inhibitors	18,858	8.1%	2	28.6%
Angiotensin receptor blockers (ARBs)	15,129	6.5%	0	0.0%
Vasopressors	750	0.3%	0	0.0%
<b>Comorbidity</b>				
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	1.4	2.5	0.7	1.3
<b>Symptoms at Diagnosis (-1, 14)</b>				
Cough	55,779	23.9%	1	14.3%
Diarrhea	11,546	4.9%	0	0.0%
Dyspnea/Short of Breath	58,784	25.1%	2	28.6%
Fever	31,793	13.6%	1	14.3%
Headache	2,546	1.1%	0	0.0%
Malaise or Fatigue	35,490	15.2%	1	14.3%
Multisystem Inflammatory Syndrome	20	0.0%	0	0.0%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Myalgia	20,229	2.6%	13,832	2.6%	177	2.3%
Nasal Congestion	19,750	2.6%	12,524	2.4%	193	2.6%
Nausea or Vomiting	35,972	4.7%	21,498	4.1%	437	5.8%
Smell or Taste Disturbance	16,365	2.1%	10,652	2.0%	177	2.3%
Sore Throat	27,398	3.6%	18,582	3.5%	244	3.2%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	8.6	11.8	8.3	11.7	9.8	12.6
Mean number of emergency room encounters	0.5	1.7	0.4	1.6	0.6	1.8
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.3	0.1	0.3
Mean number of other ambulatory encounters	1.6	5.8	1.5	5.5	1.9	6.0
Mean number of filled prescriptions	12.6	16.3	11.3	15.1	16.5	20.0
Mean number of generics dispensed	5.4	5.1	5.0	4.9	6.6	5.7
Mean number of unique drug classes dispensed	5.1	4.7	4.7	4.5	6.2	5.2
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	640,261	83.1%	430,595	81.3%	6,566	87.1%

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Myalgia	6,220	2.7%	0	0.0%
Nasal Congestion	7,033	3.0%	0	0.0%
Nausea or Vomiting	14,037	6.0%	0	0.0%
Smell or Taste Disturbance	5,536	2.4%	0	0.0%
Sore Throat	8,572	3.7%	0	0.0%
Mean number of ambulatory encounters	9.1	11.8	8.1	3.0
Mean number of emergency room encounters	0.6	1.7	0.0	NaN
Mean number of inpatient hospital encounters	0.1	0.5	0.0	NaN
Mean number of non-acute institutional encounters	0.0	0.3	0.0	NaN
Mean number of other ambulatory encounters	1.8	6.2	0.4	1.1
Mean number of filled prescriptions	15.4	18.6	15.0	12.0
Mean number of generics dispensed	6.4	5.6	6.6	4.4
Mean number of unique drug classes dispensed	6.0	5.1	6.6	4.5
<b>COVID Diagnosis (-7, 7)</b>				
Diagnosis Code for COVID-19	203,094	86.9%	6	85.7%



**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	84	0.0%	66	0.0%	0	0.0%
Intensive Care	44,099	5.7%	29,912	5.6%	488	6.5%
Mechanical Ventilation	15,191	2.0%	9,939	1.9%	176	2.3%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	2,544	0.3%	1,792	0.3%	23	0.3%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1q. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>				
Extracorporeal Membrane Oxygenation (ECMO)	18	0.0%	0	0.0%
Intensive Care	13,698	5.9%	1	14.3%
Mechanical Ventilation	5,076	2.2%	0	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	729	0.3%	0	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	128,167	N/A	81,580	N/A	1,519	N/A
<b>Demographic Characteristics</b>						
Age (years)	71.8	13.0	71.3	13.6	72.0	13.0
Age						
0-5 years	70	0.1%	55	0.1%	2	0.1%
6-11 years	41	0.0%	29	0.0%	1	0.1%
12-18 years	169	0.1%	131	0.2%	1	0.1%
19-29 years	1,162	0.9%	890	1.1%	14	0.9%
30-39 years	2,502	2.0%	1,950	2.4%	22	1.4%
40-49 years	4,643	3.6%	3,355	4.1%	54	3.6%
50-64 years	20,680	16.1%	13,461	16.5%	244	16.1%
65-74 years	43,280	33.8%	26,982	33.1%	516	34.0%
≥ 75 years	55,620	43.4%	34,727	42.6%	665	43.8%
Sex						
Female	62,192	48.5%	40,020	49.1%	773	50.9%
Male	65,975	51.5%	41,560	50.9%	746	49.1%
Race <sup>2</sup>						
American Indian or Alaska Native	541	0.4%	234	0.3%	6	0.4%
Asian	1,844	1.4%	1,700	2.1%	7	0.5%
Black or African American	22,995	17.9%	16,673	20.4%	292	19.2%
Native Hawaiian or Other Pacific Islander	1,154	0.9%	924	1.1%	5	0.3%
Unknown	29,461	23.0%	20,775	25.5%	291	19.2%
White	72,172	56.3%	41,274	50.6%	918	60.4%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	45,066	N/A	2	N/A
<b>Demographic Characteristics</b>				
Age (years)	72.5	11.8	78.8	8.6
Age				
0-5 years	13	0.0%	0	0.0%
6-11 years	11	0.0%	0	0.0%
12-18 years	37	0.1%	0	0.0%
19-29 years	258	0.6%	0	0.0%
30-39 years	530	1.2%	0	0.0%
40-49 years	1,234	2.7%	0	0.0%
50-64 years	6,975	15.5%	0	0.0%
65-74 years	15,781	35.0%	1	50.0%
≥ 75 years	20,227	44.9%	1	50.0%
Sex				
Female	21,398	47.5%	1	50.0%
Male	23,668	52.5%	1	50.0%
Race <sup>2</sup>				
American Indian or Alaska Native	301	0.7%	0	0.0%
Asian	137	0.3%	0	0.0%
Black or African American	6,029	13.4%	1	50.0%
Native Hawaiian or Other Pacific Islander	225	0.5%	0	0.0%
Unknown	8,394	18.6%	1	50.0%
White	29,980	66.5%	0	0.0%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin						
Yes	5,507	4.3%	4,639	5.7%	24	1.6%
No	78,104	60.9%	45,658	56.0%	1,034	68.1%
Unknown	44,556	34.8%	31,283	38.3%	461	30.3%
Month-Year of Cohort Entry						
April 2020	6,117	4.8%	5,096	6.2%	47	3.1%
May 2020	3,284	2.6%	2,509	3.1%	28	1.8%
June 2020	3,853	3.0%	2,817	3.5%	40	2.6%
July 2020	10,577	8.3%	7,309	9.0%	120	7.9%
August 2020	7,102	5.5%	4,372	5.4%	97	6.4%
September 2020	5,256	4.1%	2,923	3.6%	62	4.1%
October 2020	9,184	7.2%	5,177	6.3%	126	8.3%
November 2020	19,254	15.0%	11,540	14.1%	234	15.4%
December 2020	25,859	20.2%	15,755	19.3%	309	20.3%
January 2021	21,992	17.2%	13,694	16.8%	273	18.0%
February 2021	9,446	7.4%	6,129	7.5%	115	7.6%
March 2021	6,243	4.9%	4,259	5.2%	68	4.5%
Census Bureau (CB) Region						
Midwest	28,436	22.2%	17,814	21.8%	269	17.7%
Northeast	12,005	9.4%	9,588	11.8%	133	8.8%
South	72,144	56.3%	42,384	52.0%	1,051	69.2%
West	15,582	12.2%	11,794	14.5%	66	4.3%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin				
Yes	843	1.9%	1	50.0%
No	31,411	69.7%	1	50.0%
Unknown	12,812	28.4%	0	0.0%
Month-Year of Cohort Entry				
April 2020	974	2.2%	0	0.0%
May 2020	747	1.7%	0	0.0%
June 2020	996	2.2%	0	0.0%
July 2020	3,148	7.0%	0	0.0%
August 2020	2,633	5.8%	0	0.0%
September 2020	2,271	5.0%	0	0.0%
October 2020	3,881	8.6%	0	0.0%
November 2020	7,480	16.6%	0	0.0%
December 2020	9,793	21.7%	2	100.0%
January 2021	8,025	17.8%	0	0.0%
February 2021	3,202	7.1%	0	0.0%
March 2021	1,916	4.3%	0	0.0%
Census Bureau (CB) Region				
Midwest	10,353	23.0%	0	0.0%
Northeast	2,284	5.1%	0	0.0%
South	28,708	63.7%	1	50.0%
West	3,721	8.3%	1	50.0%
CB Region (Invalid)	0	0.0%	0	0.0%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	81,580	63.7%	81,580	100.0%	0	0.0%
Suburban (population 2,500 - 49,999)	1,519	1.2%	0	0.0%	1,519	100.0%
Rural (population < 2,500)	45,066	35.2%	0	0.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	2	0.0%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	59,642.1	21,790.3	62,720.7	23,882.1	50,111.0	16,212.4
Average Median Home Value <sup>3</sup>	199,835.9	131,672.4	228,240.4	150,037.4	148,971.0	88,634.7
Average Percent Unemployment <sup>3</sup>	5.8	3.1	5.9	3.0	6.4	2.7
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	128,167	100.0%	81,580	100.0%	1,519	100.0%
Median Home Value Available	128,167	100.0%	81,580	100.0%	1,519	100.0%
Percent Unemployment Available	128,167	100.0%	81,580	100.0%	1,519	100.0%
All SES Indicators Available	128,167	100.0%	81,580	100.0%	1,519	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,897	1.5%	1,310	1.6%	25	1.6%
Adult BMI 20-29	16,385	12.8%	10,831	13.3%	175	11.5%
Adult BMI 30-39	20,590	16.1%	13,000	15.9%	261	17.2%
Adult BMI 40 or greater	10,338	8.1%	6,380	7.8%	135	8.9%
Alcohol or Drug Abuse	5,479	4.3%	3,730	4.6%	81	5.3%
Alcohol Use Abuse	3,439	2.7%	2,403	2.9%	54	3.6%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Missing)	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%
Urbanicity				
Urban (population >= 50,000)	0	0.0%	0	0.0%
Suburban (population 2,500 - 49,999)	0	0.0%	0	0.0%
Rural (population < 2,500)	45,066	100.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	2	100.0%
Proxies for Socioeconomic Status (SES)				
Average Median Household Income <sup>3</sup>	54,390.9	16,482.3	46,922.5	20,956.5
Average Median Home Value <sup>3</sup>	150,132.7	69,463.5	176,000.0	146,936.8
Average Percent Unemployment <sup>3</sup>	5.7	3.3	11.6	5.8
Missingness in Proxies for Socioeconomic Status (SES)				
Median Household Income Available	45,066	100.0%	2	100.0%
Median Home Value Available	45,066	100.0%	2	100.0%
Percent Unemployment Available	45,066	100.0%	2	100.0%
All SES Indicators Available	45,066	100.0%	2	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>				
Adult BMI 19.9 or less	562	1.2%	0	0.0%
Adult BMI 20-29	5,379	11.9%	0	0.0%
Adult BMI 30-39	7,329	16.3%	0	0.0%
Adult BMI 40 or greater	3,823	8.5%	0	0.0%
Alcohol or Drug Abuse	1,668	3.7%	0	0.0%
Alcohol Use Abuse	982	2.2%	0	0.0%



**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Any Cancer	15,785	12.3%	10,159	12.5%	189	12.4%
Asthma	11,284	8.8%	7,389	9.1%	126	8.3%
Autoimmune Conditions	5,996	4.7%	3,748	4.6%	91	6.0%
Blood Stem Cell Transplant	16	0.0%	10	0.0%	0	0.0%
Chronic Kidney Disease	43,397	33.9%	28,259	34.6%	499	32.9%
Congestive Heart Failure	28,483	22.2%	17,965	22.0%	331	21.8%
Chronic Obstructive Pulmonary Disease (COPD)	30,446	23.8%	18,150	22.2%	409	26.9%
Coronary Artery Disease	44,283	34.6%	27,948	34.3%	541	35.6%
Cystic Fibrosis	22	0.0%	13	0.0%	0	0.0%
Diabetes Mellitus	57,693	45.0%	36,321	44.5%	707	46.5%
Drug Abuse Dependence	2,533	2.0%	1,692	2.1%	34	2.2%
HIV	502	0.4%	425	0.5%	5	0.3%
Hypertension	96,573	75.3%	60,350	74.0%	1,192	78.5%
Interstitial Lung Disease	3,959	3.1%	2,513	3.1%	54	3.6%
Liver Disease	9,177	7.2%	6,072	7.4%	118	7.8%
Neurologic Conditions	28,489	22.2%	18,425	22.6%	376	24.8%
Obesity	40,071	31.3%	25,222	30.9%	492	32.4%
Pulmonary Conditions	28,943	22.6%	18,034	22.1%	351	23.1%
Sickle Cell Disease	305	0.2%	241	0.3%	4	0.3%
Smoking	32,021	25.0%	19,209	23.5%	418	27.5%
Solid Organ or Stem Cell Transplant	249	0.2%	178	0.2%	2	0.1%
Solid Organ Transplant	233	0.2%	168	0.2%	2	0.1%
Vascular Disease	104,226	81.3%	65,371	80.1%	1,266	83.3%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Any Cancer	5,436	12.1%	1	50.0%
Asthma	3,769	8.4%	0	0.0%
Autoimmune Conditions	2,156	4.8%	1	50.0%
Blood Stem Cell Transplant	6	0.0%	0	0.0%
Chronic Kidney Disease	14,639	32.5%	0	0.0%
Congestive Heart Failure	10,187	22.6%	0	0.0%
Chronic Obstructive Pulmonary Disease (COPD)	11,887	26.4%	0	0.0%
Coronary Artery Disease	15,794	35.0%	0	0.0%
Cystic Fibrosis	9	0.0%	0	0.0%
Diabetes Mellitus	20,664	45.9%	1	50.0%
Drug Abuse Dependence	807	1.8%	0	0.0%
HIV	72	0.2%	0	0.0%
Hypertension	35,030	77.7%	1	50.0%
Interstitial Lung Disease	1,392	3.1%	0	0.0%
Liver Disease	2,987	6.6%	0	0.0%
Neurologic Conditions	9,688	21.5%	0	0.0%
Obesity	14,357	31.9%	0	0.0%
Pulmonary Conditions	10,558	23.4%	0	0.0%
Sickle Cell Disease	60	0.1%	0	0.0%
Smoking	12,394	27.5%	0	0.0%
Solid Organ or Stem Cell Transplant	69	0.2%	0	0.0%
Solid Organ Transplant	63	0.1%	0	0.0%
Vascular Disease	37,588	83.4%	1	50.0%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,150	3.2%	2,665	3.3%	58	3.8%
Glucocorticoids Inhaled	14,304	11.2%	8,779	10.8%	175	11.5%
Glucocorticoids NonSystemic	24,189	18.9%	15,257	18.7%	281	18.5%
Glucocorticoids Ophthalmic	2,492	1.9%	1,573	1.9%	33	2.2%
Glucocorticoids Systemic	50,415	39.3%	29,986	36.8%	632	41.6%
Glucocorticoids Topical	9,431	7.4%	6,195	7.6%	97	6.4%
Immune Modulators	7,020	5.5%	4,587	5.6%	75	4.9%
Immunosuppressants	3,881	3.0%	2,503	3.1%	54	3.6%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	11,574	9.0%	7,025	8.6%	146	9.6%
Angiotensin receptor blockers (ARBs)	10,880	8.5%	7,020	8.6%	132	8.7%
Vasopressors	2,033	1.6%	1,328	1.6%	25	1.6%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	3.0	3.4	3.1	3.4	3.1	3.4
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	31,342	24.5%	20,162	24.7%	370	24.4%
Diarrhea	13,217	10.3%	8,368	10.3%	151	9.9%
Dyspnea/Short of Breath	96,964	75.7%	61,140	74.9%	1,143	75.2%
Fever	29,325	22.9%	19,751	24.2%	335	22.1%
Headache	1,562	1.2%	1,089	1.3%	18	1.2%
Malaise or Fatigue	42,856	33.4%	26,702	32.7%	562	37.0%
Multisystem Inflammatory Syndrome	86	0.1%	68	0.1%	1	0.1%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>				
Chemotherapy	1,426	3.2%	1	50.0%
Glucocorticoids Inhaled	5,350	11.9%	0	0.0%
Glucocorticoids NonSystemic	8,651	19.2%	0	0.0%
Glucocorticoids Ophthalmic	886	2.0%	0	0.0%
Glucocorticoids Systemic	19,796	43.9%	1	50.0%
Glucocorticoids Topical	3,139	7.0%	0	0.0%
Immune Modulators	2,357	5.2%	1	50.0%
Immunosuppressants	1,323	2.9%	1	50.0%
<b>Concurrent Use Of (-30, 0)</b>				
Angiotensin-converting enzyme (ACE) inhibitors	4,401	9.8%	2	100.0%
Angiotensin receptor blockers (ARBs)	3,728	8.3%	0	0.0%
Vasopressors	680	1.5%	0	0.0%
<b>Comorbidity</b>				
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.9	3.3	1.0	1.4
<b>Symptoms at Diagnosis (-1, 14)</b>				
Cough	10,810	24.0%	0	0.0%
Diarrhea	4,698	10.4%	0	0.0%
Dyspnea/Short of Breath	34,680	77.0%	1	50.0%
Fever	9,239	20.5%	0	0.0%
Headache	455	1.0%	0	0.0%
Malaise or Fatigue	15,592	34.6%	0	0.0%
Multisystem Inflammatory Syndrome	17	0.0%	0	0.0%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Myalgia	2,052	1.6%	1,341	1.6%	27	1.8%
Nasal Congestion	659	0.5%	398	0.5%	7	0.5%
Nausea or Vomiting	13,031	10.2%	7,987	9.8%	156	10.3%
Smell or Taste Disturbance	1,106	0.9%	703	0.9%	23	1.5%
Sore Throat	1,116	0.9%	699	0.9%	11	0.7%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.7	16.9	13.8	17.4	14.0	16.9
Mean number of emergency room encounters	1.3	2.7	1.3	2.8	1.4	2.4
Mean number of inpatient hospital encounters	0.3	0.7	0.3	0.8	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.5	0.1	0.5	0.1	0.5
Mean number of other ambulatory encounters	3.7	9.2	3.6	9.1	4.0	8.9
Mean number of filled prescriptions	21.0	20.4	20.1	19.6	22.6	21.0
Mean number of generics dispensed	9.0	6.1	8.7	5.9	9.5	6.2
Mean number of unique drug classes dispensed	8.4	5.5	8.1	5.4	8.9	5.6
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	128,167	100.0%	81,580	100.0%	1,519	100.0%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Myalgia	684	1.5%	0	0.0%
Nasal Congestion	254	0.6%	0	0.0%
Nausea or Vomiting	4,888	10.8%	0	0.0%
Smell or Taste Disturbance	380	0.8%	0	0.0%
Sore Throat	406	0.9%	0	0.0%
<b>Health Service Utilization Intensity</b>				
Mean number of ambulatory encounters	13.4	16.1	11.0	0.0
Mean number of emergency room encounters	1.3	2.6	0.0	NaN
Mean number of inpatient hospital encounters	0.3	0.7	0.0	NaN
Mean number of non-acute institutional encounters	0.1	0.4	0.0	NaN
Mean number of other ambulatory encounters	3.7	9.4	0.0	NaN
Mean number of filled prescriptions	22.5	21.5	23.5	9.2
Mean number of generics dispensed	9.4	6.3	8.0	4.2
Mean number of unique drug classes dispensed	8.8	5.7	8.0	4.2
<b>COVID Diagnosis (-7, 7)</b>				
Diagnosis Code for COVID-19	45,066	100.0%	2	100.0%

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	164	0.1%	131	0.2%	1	0.1%
Intensive Care	68,362	53.3%	45,421	55.7%	777	51.2%
Mechanical Ventilation	22,960	17.9%	14,542	17.8%	276	18.2%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3,610	2.8%	2,470	3.0%	41	2.7%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1r. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among All Ages, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Rural		Unknown Urbanicity	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>				
Extracorporeal Membrane Oxygenation (ECMO)	32	0.1%	0	0.0%
Intensive Care	22,163	49.2%	1	50.0%
Mechanical Ventilation	8,142	18.1%	0	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	1,099	2.4%	0	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)



**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	487,040	N/A	12,360	N/A	32,199	N/A
<b>Demographic Characteristics</b>						
Age (years)	40.4	15.6	39.5	12.9	48.1	11.3
Age						
0-5 years	8,231	1.7%	137	1.1%	85	0.3%
6-11 years	12,438	2.6%	144	1.2%	146	0.5%
12-18 years	31,580	6.5%	351	2.8%	448	1.4%
19-29 years	89,419	18.4%	2,512	20.3%	3,021	9.4%
30-39 years	86,781	17.8%	3,428	27.7%	5,234	16.3%
40-49 years	90,333	18.5%	2,742	22.2%	6,181	19.2%
50-64 years	168,258	34.5%	3,046	24.6%	17,084	53.1%
65-74 years						
≥ 75 years	260,250	53.4%	6,356	51.4%	19,765	61.4%
Sex	226,790	46.6%	6,004	48.6%	12,434	38.6%
Female						
Male	1,740	0.4%	0	0.0%	0	0.0%
Race <sup>2</sup>	12,360	2.5%	12,360	100.0%	0	0.0%
American Indian or Alaska Native	32,199	6.6%	0	0.0%	32,199	100.0%
Asian	1,195	0.2%	0	0.0%	0	0.0%
Black or African American	286,937	58.9%	0	0.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	152,609	31.3%	0	0.0%	0	0.0%
Unknown						

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	1,740	N/A	1,195	N/A	152,609	N/A	286,937	N/A	200,103	N/A
<b>Demographic Characteristics</b>										
Age (years)	44.3	13.1	46.9	11.4	44.6	13.5	37.3	16.1	44.9	13.1
Age										
0-5 years	7	0.4%	5	0.4%	971	0.6%	7,026	2.4%	1,205	0.6%
6-11 years	12	0.7%	5	0.4%	1,561	1.0%	10,570	3.7%	1,868	0.9%
12-18 years	59	3.4%	20	1.7%	5,477	3.6%	25,225	8.8%	6,355	3.2%
19-29 years	257	14.8%	151	12.6%	22,846	15.0%	60,632	21.1%	28,787	14.4%
30-39 years	301	17.3%	175	14.6%	25,617	16.8%	52,026	18.1%	34,755	17.4%
40-49 years	389	22.4%	259	21.7%	27,779	18.2%	52,983	18.5%	37,350	18.7%
50-64 years	715	41.1%	580	48.5%	68,358	44.8%	78,475	27.3%	89,783	44.9%
65-74 years										
≥ 75 years	973	55.9%	587	49.1%	81,763	53.6%	150,806	52.6%	109,444	54.7%
Sex	767	44.1%	608	50.9%	70,846	46.4%	136,131	47.4%	90,659	45.3%
Female										
Male	1,740	100.0%	0	0.0%	0	0.0%	0	0.0%	1,740	0.9%
Race <sup>2</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	12,360	6.2%
American Indian or Alaska Native	0	0.0%	0	0.0%	0	0.0%	0	0.0%	32,199	16.1%
Asian	0	0.0%	1,195	100.0%	0	0.0%	0	0.0%	1,195	0.6%
Black or African American	0	0.0%	0	0.0%	0	0.0%	286,937	100.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	0	0.0%	0	0.0%	152,609	100.0%	0	0.0%	152,609	76.3%
Unknown										

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
White	41,985	8.6%	1,508	12.2%	915	2.8%
Hispanic origin	60,060	12.3%	1,172	9.5%	14,218	44.2%
Yes	384,995	79.0%	9,680	78.3%	17,066	53.0%
No						
Unknown	14,509	3.0%	592	4.8%	1,746	5.4%
May 2020	12,567	2.6%	395	3.2%	1,149	3.6%
June 2020	21,283	4.4%	517	4.2%	1,583	4.9%
July 2020	39,597	8.1%	894	7.2%	3,568	11.1%
August 2020	24,737	5.1%	603	4.9%	2,042	6.3%
September 2020	22,635	4.6%	506	4.1%	1,340	4.2%
October 2020	36,666	7.5%	777	6.3%	1,907	5.9%
November 2020	75,617	15.5%	1,917	15.5%	3,802	11.8%
December 2020	95,338	19.6%	2,445	19.8%	5,525	17.2%
January 2021	78,532	16.1%	1,992	16.1%	5,255	16.3%
February 2021	34,152	7.0%	906	7.3%	2,335	7.3%
March 2021	31,407	6.4%	816	6.6%	1,947	6.0%
Census Bureau (CB) Region						
Midwest	65,563	13.5%	792	6.4%	3,205	10.0%
Northeast	107,396	22.1%	3,724	30.1%	5,456	16.9%
South	215,688	44.3%	3,328	26.9%	20,646	64.1%
West	96,999	19.9%	4,431	35.8%	2,858	8.9%
CB Region (Invalid)	335	0.1%	22	0.2%	16	0.0%
CB Region (Missing)	608	0.1%	32	0.3%	9	0.0%

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
White	655	37.6%	156	13.1%	4,885	3.2%	33,866	11.8%	8,119	4.1%
Hispanic origin	475	27.3%	512	42.8%	42,867	28.1%	816	0.3%	59,244	29.6%
Yes	610	35.1%	527	44.1%	104,857	68.7%	252,255	87.9%	132,740	66.3%
No										
Unknown	55	3.2%	43	3.6%	3,603	2.4%	8,470	3.0%	6,039	3.0%
May 2020	33	1.9%	39	3.3%	3,588	2.4%	7,363	2.6%	5,204	2.6%
June 2020	76	4.4%	48	4.0%	5,355	3.5%	13,704	4.8%	7,579	3.8%
July 2020	160	9.2%	112	9.4%	9,961	6.5%	24,902	8.7%	14,695	7.3%
August 2020	86	4.9%	65	5.4%	6,987	4.6%	14,954	5.2%	9,783	4.9%
September 2020	84	4.8%	48	4.0%	7,253	4.8%	13,404	4.7%	9,231	4.6%
October 2020	140	8.0%	92	7.7%	12,139	8.0%	21,611	7.5%	15,055	7.5%
November 2020	299	17.2%	192	16.1%	25,677	16.8%	43,730	15.2%	31,887	15.9%
December 2020	351	20.2%	203	17.0%	30,700	20.1%	56,114	19.6%	39,224	19.6%
January 2021	273	15.7%	204	17.1%	25,252	16.5%	45,556	15.9%	32,976	16.5%
February 2021	93	5.3%	89	7.4%	11,271	7.4%	19,458	6.8%	14,694	7.3%
March 2021	90	5.2%	60	5.0%	10,823	7.1%	17,671	6.2%	13,736	6.9%
Census Bureau (CB) Region										
Midwest	133	7.6%	110	9.2%	23,997	15.7%	37,326	13.0%	28,237	14.1%
Northeast	160	9.2%	172	14.4%	33,969	22.3%	63,915	22.3%	43,481	21.7%
South	697	40.1%	385	32.2%	59,844	39.2%	130,788	45.6%	84,900	42.4%
West	747	42.9%	476	39.8%	34,517	22.6%	53,970	18.8%	43,029	21.5%
CB Region (Invalid)	1	0.1%	1	0.1%	135	0.1%	160	0.1%	175	0.1%
CB Region (Missing)	1	0.1%	1	0.1%	142	0.1%	423	0.1%	185	0.1%

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	451	0.1%	31	0.3%	9	0.0%
Urbanicity						
Urban (population >= 50,000)	370,526	76.1%	11,500	93.0%	25,413	78.9%
Suburban (population 2,500 - 49,999)	3,838	0.8%	21	0.2%	366	1.1%
Rural (population < 2,500)	111,285	22.8%	754	6.1%	6,386	19.8%
Zip Code Unknown or Urbanicity Not Available	1,391	0.3%	85	0.7%	34	0.1%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	73,217.1	29,065.0	87,214.8	32,444.2	58,142.9	23,020.8
Average Median Home Value <sup>3</sup>	297,606.4	229,648.6	448,082.0	301,289.8	214,667.9	148,995.8
Average Percent Unemployment <sup>3</sup>	5.1	2.5	4.7	1.8	6.9	3.5
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	431,454	88.6%	10,349	83.7%	29,822	92.6%
Median Home Value Available	431,339	88.6%	10,337	83.6%	29,794	92.5%
Percent Unemployment Available	431,951	88.7%	10,352	83.8%	29,856	92.7%
All SES Indicators Available	431,049	88.5%	10,337	83.6%	29,781	92.5%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,780	0.4%	60	0.5%	187	0.6%
Adult BMI 20-29	26,611	5.5%	722	5.8%	2,069	6.4%

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	1	0.1%	50	4.2%	5	0.0%	355	0.1%	96	0.0%
Urbanicity										
Urban (population >= 50,000)	1,236	71.0%	939	78.6%	107,715	70.6%	223,723	78.0%	146,803	73.4%
Suburban (population 2,500 - 49,999)	11	0.6%	8	0.7%	1,414	0.9%	2,018	0.7%	1,820	0.9%
Rural (population < 2,500)	490	28.2%	196	16.4%	43,200	28.3%	60,259	21.0%	51,026	25.5%
Zip Code Unknown or Urbanicity Not Available	3	0.2%	52	4.4%	280	0.2%	937	0.3%	454	0.2%
Proxies for Socioeconomic Status (SES)										
Average Median Household Income <sup>3</sup>	65,750.6	24,103.0	71,107.4	26,652.5	75,844.3	28,144.3	73,071.7	29,327.8	73,425.5	28,066.5
Average Median Home Value <sup>3</sup>	253,631.2	160,224.4	312,440.8	220,928.1	305,619.4	234,673.3	297,157.7	228,617.0	298,246.8	229,633.6
Average Percent Unemployment <sup>3</sup>	5.6	3.0	5.4	2.3	4.7	2.2	5.1	2.5	5.1	2.6
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	1,649	94.8%	1,054	88.2%	135,616	88.9%	252,964	88.2%	178,490	89.2%
Median Home Value Available	1,648	94.7%	1,051	87.9%	135,585	88.8%	252,924	88.1%	178,415	89.2%
Percent Unemployment Available	1,652	94.9%	1,055	88.3%	135,778	89.0%	253,258	88.3%	178,693	89.3%
All SES Indicators Available	1,647	94.7%	1,050	87.9%	135,477	88.8%	252,757	88.1%	178,292	89.1%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	6	0.3%	3	0.3%	680	0.4%	844	0.3%	936	0.5%
Adult BMI 20-29	83	4.8%	76	6.4%	8,993	5.9%	14,668	5.1%	11,943	6.0%

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 30-39	34,971	7.2%	408	3.3%	4,817	15.0%
Adult BMI 40 or greater	19,641	4.0%	107	0.9%	3,823	11.9%
Alcohol or Drug Abuse	10,405	2.1%	70	0.6%	1,320	4.1%
Alcohol Use Abuse	6,114	1.3%	53	0.4%	706	2.2%
Any Cancer	12,372	2.5%	193	1.6%	1,537	4.8%
Asthma	27,780	5.7%	457	3.7%	3,647	11.3%
Autoimmune Conditions	9,411	1.9%	114	0.9%	1,658	5.1%
Blood Stem Cell Transplant	36	0.0%	2	0.0%	1	0.0%
Chronic Kidney Disease	20,546	4.2%	311	2.5%	4,376	13.6%
Congestive Heart Failure	10,875	2.2%	72	0.6%	2,937	9.1%
Chronic Obstructive Pulmonary Disease (COPD)	17,756	3.6%	122	1.0%	2,866	8.9%
Coronary Artery Disease	22,122	4.5%	264	2.1%	3,824	11.9%
Cystic Fibrosis	91	0.0%	2	0.0%	3	0.0%
Diabetes Mellitus	55,624	11.4%	1,115	9.0%	9,488	29.5%
Drug Abuse Dependence	5,538	1.1%	31	0.3%	788	2.4%
HIV	1,942	0.4%	32	0.3%	551	1.7%
Hypertension	101,897	20.9%	1,740	14.1%	16,002	49.7%
Interstitial Lung Disease	1,644	0.3%	15	0.1%	325	1.0%
Liver Disease	14,742	3.0%	347	2.8%	1,464	4.5%
Neurologic Conditions	20,488	4.2%	202	1.6%	3,081	9.6%
Obesity	74,270	15.2%	814	6.6%	11,155	34.6%
Pulmonary Conditions	12,039	2.5%	214	1.7%	2,025	6.3%

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 30-39	143	8.2%	123	10.3%	12,752	8.4%	16,728	5.8%	18,243	9.1%
Adult BMI 40 or greater	103	5.9%	68	5.7%	7,876	5.2%	7,664	2.7%	11,977	6.0%
Alcohol or Drug Abuse	61	3.5%	52	4.4%	4,923	3.2%	3,979	1.4%	6,426	3.2%
Alcohol Use Abuse	41	2.4%	30	2.5%	2,853	1.9%	2,431	0.8%	3,683	1.8%
Any Cancer	48	2.8%	39	3.3%	5,356	3.5%	5,199	1.8%	7,173	3.6%
Asthma	154	8.9%	86	7.2%	10,323	6.8%	13,113	4.6%	14,667	7.3%
Autoimmune Conditions	45	2.6%	48	4.0%	4,074	2.7%	3,472	1.2%	5,939	3.0%
Blood Stem Cell Transplant	0	0.0%	0	0.0%	12	0.0%	21	0.0%	15	0.0%
Chronic Kidney Disease	108	6.2%	111	9.3%	8,718	5.7%	6,922	2.4%	13,624	6.8%
Congestive Heart Failure	42	2.4%	69	5.8%	5,184	3.4%	2,571	0.9%	8,304	4.1%
Chronic Obstructive Pulmonary Disease (COPD)	88	5.1%	60	5.0%	9,801	6.4%	4,819	1.7%	12,937	6.5%
Coronary Artery Disease	98	5.6%	127	10.6%	10,808	7.1%	7,001	2.4%	15,121	7.6%
Cystic Fibrosis	0	0.0%	0	0.0%	47	0.0%	39	0.0%	52	0.0%
Diabetes Mellitus	320	18.4%	295	24.7%	21,133	13.8%	23,273	8.1%	32,351	16.2%
Drug Abuse Dependence	26	1.5%	28	2.3%	2,655	1.7%	2,010	0.7%	3,528	1.8%
HIV	16	0.9%	6	0.5%	574	0.4%	763	0.3%	1,179	0.6%
Hypertension	464	26.7%	400	33.5%	39,775	26.1%	43,516	15.2%	58,381	29.2%
Interstitial Lung Disease	7	0.4%	8	0.7%	807	0.5%	482	0.2%	1,162	0.6%
Liver Disease	87	5.0%	83	6.9%	6,149	4.0%	6,612	2.3%	8,130	4.1%
Neurologic Conditions	106	6.1%	98	8.2%	10,443	6.8%	6,558	2.3%	13,930	7.0%
Obesity	348	20.0%	277	23.2%	27,581	18.1%	34,095	11.9%	40,175	20.1%
Pulmonary Conditions	66	3.8%	56	4.7%	5,243	3.4%	4,435	1.5%	7,604	3.8%



**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sickle Cell Disease	566	0.1%	3	0.0%	331	1.0%
Smoking	30,870	6.3%	308	2.5%	4,202	13.1%
Solid Organ or Stem Cell Transplant	355	0.1%	13	0.1%	67	0.2%
Solid Organ Transplant	319	0.1%	11	0.1%	66	0.2%
Vascular Disease	118,527	24.3%	2,005	16.2%	17,034	52.9%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,208	0.9%	68	0.6%	630	2.0%
Glucocorticoids Inhaled	18,934	3.9%	314	2.5%	2,234	6.9%
Glucocorticoids NonSystemic	41,661	8.6%	945	7.6%	4,458	13.8%
Glucocorticoids Ophthalmic	2,732	0.6%	72	0.6%	337	1.0%
Glucocorticoids Systemic	88,658	18.2%	1,421	11.5%	9,103	28.3%
Glucocorticoids Topical	22,157	4.5%	589	4.8%	2,248	7.0%
Immune Modulators	9,270	1.9%	160	1.3%	1,322	4.1%
Immunosuppressants	6,598	1.4%	102	0.8%	1,017	3.2%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	18,495	3.8%	277	2.2%	1,965	6.1%
Angiotensin receptor blockers (ARBs)	16,089	3.3%	435	3.5%	2,270	7.0%
Vasopressors	570	0.1%	8	0.1%	100	0.3%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.4	0.2	0.9	1.2	2.2

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Sickle Cell Disease	2	0.1%	2	0.2%	16	0.0%	212	0.1%	354	0.2%
Smoking	153	8.8%	134	11.2%	14,904	9.8%	11,169	3.9%	19,701	9.8%
Solid Organ or Stem Cell Transplant	0	0.0%	2	0.2%	130	0.1%	143	0.0%	212	0.1%
Solid Organ Transplant	0	0.0%	2	0.2%	118	0.1%	122	0.0%	197	0.1%
Vascular Disease	518	29.8%	452	37.8%	46,708	30.6%	51,810	18.1%	66,717	33.3%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	24	1.4%	17	1.4%	1,807	1.2%	1,662	0.6%	2,546	1.3%
Glucocorticoids Inhaled	90	5.2%	52	4.4%	8,196	5.4%	8,048	2.8%	10,886	5.4%
Glucocorticoids NonSystemic	185	10.6%	139	11.6%	15,813	10.4%	20,121	7.0%	21,540	10.8%
Glucocorticoids Ophthalmic	16	0.9%	14	1.2%	994	0.7%	1,299	0.5%	1,433	0.7%
Glucocorticoids Systemic	400	23.0%	241	20.2%	34,844	22.8%	42,649	14.9%	46,009	23.0%
Glucocorticoids Topical	90	5.2%	84	7.0%	7,610	5.0%	11,536	4.0%	10,621	5.3%
Immune Modulators	35	2.0%	51	4.3%	4,028	2.6%	3,674	1.3%	5,596	2.8%
Immunosuppressants	32	1.8%	40	3.3%	2,949	1.9%	2,458	0.9%	4,140	2.1%
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	110	6.3%	69	5.8%	7,364	4.8%	8,710	3.0%	9,785	4.9%
Angiotensin receptor blockers	82	4.7%	47	3.9%	5,582	3.7%	7,673	2.7%	8,416	4.2%
Vasopressors	1	0.1%	1	0.1%	235	0.2%	225	0.1%	345	0.2%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.7	1.6	0.9	1.9	0.7	1.6	0.3	1.1	0.8	1.7

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	85,966	17.7%	2,065	16.7%	7,081	22.0%
Diarrhea	12,058	2.5%	232	1.9%	1,379	4.3%
Dyspnea/Short of Breath	57,288	11.8%	1,272	10.3%	7,519	23.4%
Fever	49,696	10.2%	1,400	11.3%	4,227	13.1%
Headache	6,581	1.4%	130	1.1%	631	2.0%
Malaise or Fatigue	34,806	7.1%	795	6.4%	3,431	10.7%
Multisystem Inflammatory Syndrome	54	0.0%	0	0.0%	8	0.0%
Myalgia	13,762	2.8%	335	2.7%	1,074	3.3%
Nasal Congestion	14,334	2.9%	197	1.6%	715	2.2%
Nausea or Vomiting	15,635	3.2%	224	1.8%	1,886	5.9%
Smell or Taste Disturbance	12,808	2.6%	209	1.7%	843	2.6%
Sore Throat	22,063	4.5%	463	3.7%	901	2.8%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	6.3	9.5	5.1	7.7	9.7	13.7
Mean number of emergency room encounters	0.3	1.3	0.1	0.8	0.8	2.5
Mean number of inpatient hospital encounters	0.1	0.3	0.0	0.2	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.2	0.0	0.1	0.0	0.3
Mean number of other ambulatory encounters	0.9	4.1	0.6	2.9	1.8	6.4
Mean number of filled prescriptions	8.2	12.8	4.7	7.8	14.6	15.8

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	328	18.9%	232	19.4%	26,946	17.7%	49,314	17.2%	36,652	18.3%
Diarrhea	67	3.9%	40	3.3%	4,305	2.8%	6,035	2.1%	6,023	3.0%
Dyspnea/Short of Breath	307	17.6%	209	17.5%	20,407	13.4%	27,574	9.6%	29,714	14.8%
Fever	197	11.3%	138	11.5%	14,465	9.5%	29,269	10.2%	20,427	10.2%
Headache	29	1.7%	16	1.3%	1,548	1.0%	4,227	1.5%	2,354	1.2%
Malaise or Fatigue	131	7.5%	94	7.9%	11,860	7.8%	18,495	6.4%	16,311	8.2%
Multisystem Inflammatory Syndrome	0	0.0%	0	0.0%	15	0.0%	31	0.0%	23	0.0%
Myalgia	61	3.5%	41	3.4%	4,160	2.7%	8,091	2.8%	5,671	2.8%
Nasal Congestion	43	2.5%	21	1.8%	4,423	2.9%	8,935	3.1%	5,399	2.7%
Nausea or Vomiting	84	4.8%	53	4.4%	5,525	3.6%	7,863	2.7%	7,772	3.9%
Smell or Taste Disturbance	41	2.4%	24	2.0%	3,555	2.3%	8,136	2.8%	4,672	2.3%
Sore Throat	74	4.3%	47	3.9%	6,135	4.0%	14,443	5.0%	7,620	3.8%
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory	6.6	9.6	8.6	12.5	7.8	10.3	5.2	8.1	8.0	10.8
Mean number of emergency room encounters	0.5	2.2	0.5	1.6	0.4	1.6	0.2	0.9	0.4	1.7
Mean number of inpatient hospital encounters	0.1	0.4	0.1	0.4	0.1	0.4	0.0	0.2	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.3	0.0	0.3	0.0	0.2	0.0	0.1	0.0	0.2
Mean number of other ambulatory encounters	1.7	5.2	1.5	4.8	1.5	5.0	0.4	3.0	1.5	5.2
Mean number of filled prescriptions	10.9	14.1	11.4	12.7	11.5	14.3	5.9	10.0	11.6	14.3

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of generics dispensed	3.6	4.5	2.3	3.1	6.5	5.3
Mean number of unique drug classes dispensed	3.4	4.1	2.2	2.8	6.0	4.8
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	383,876	78.8%	9,547	77.2%	26,546	82.4%
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	60	0.0%	2	0.0%	7	0.0%
Intensive Care	9,277	1.9%	138	1.1%	1,955	6.1%
Mechanical Ventilation	3,092	0.6%	43	0.3%	686	2.1%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	663	0.1%	6	0.0%	238	0.7%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1s. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of generics dispensed	4.6	4.7	5.1	4.5	4.8	4.6	2.8	3.7	4.9	4.7
Mean number of unique drug classes dispensed	4.3	4.3	4.7	4.1	4.5	4.2	2.6	3.4	4.6	4.3
<b>COVID Diagnosis (-7, 7)</b>										
Diagnosis Code for COVID-19	1,323	76.0%	962	80.5%	118,306	77.5%	227,192	79.2%	156,684	78.3%
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	0	0.0%	0	0.0%	12	0.0%	39	0.0%	21	0.0%
Intensive Care	41	2.4%	43	3.6%	3,585	2.3%	3,515	1.2%	5,762	2.9%
Mechanical Ventilation	17	1.0%	11	0.9%	1,331	0.9%	1,004	0.3%	2,088	1.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	1	0.1%	2	0.2%	219	0.1%	197	0.1%	466	0.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	31,236	N/A	608	N/A	5,452	N/A
<b>Demographic Characteristics</b>						
Age (years)	52.9	10.7	49.3	10.6	55.1	8.5
Age						
0-5 years	78	0.2%	0	0.0%	0	0.0%
6-11 years	43	0.1%	0	0.0%	1	0.0%
12-18 years	187	0.6%	0	0.0%	8	0.1%
19-29 years	1,268	4.1%	27	4.4%	94	1.7%
30-39 years	2,723	8.7%	118	19.4%	364	6.7%
40-49 years	5,002	16.0%	138	22.7%	752	13.8%
50-64 years	21,935	70.2%	325	53.5%	4,233	77.6%
65-74 years						
≥ 75 years	14,879	47.6%	268	44.1%	3,058	56.1%
Sex	16,357	52.4%	340	55.9%	2,394	43.9%
Female						
Male	163	0.5%	0	0.0%	0	0.0%
Race <sup>2</sup>	608	1.9%	608	100.0%	0	0.0%
American Indian or Alaska Native	5,452	17.5%	0	0.0%	5,452	100.0%
Asian	155	0.5%	0	0.0%	0	0.0%
Black or African American	13,359	42.8%	0	0.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	11,499	36.8%	0	0.0%	0	0.0%
Unknown						

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	163	N/A	155	N/A	11,499	N/A	13,359	N/A	17,877	N/A
<b>Demographic Characteristics</b>										
Age (years)	53.5	9.2	54.4	8.4	55.7	8.7	49.8	12.4	55.3	8.8
Age										
0-5 years	0	0.0%	0	0.0%	8	0.1%	70	0.5%	8	0.0%
6-11 years	0	0.0%	0	0.0%	3	0.0%	39	0.3%	4	0.0%
12-18 years	0	0.0%	0	0.0%	24	0.2%	155	1.2%	32	0.2%
19-29 years	7	4.3%	3	1.9%	248	2.2%	889	6.7%	379	2.1%
30-39 years	10	6.1%	13	8.4%	612	5.3%	1,606	12.0%	1,117	6.2%
40-49 years	31	19.0%	25	16.1%	1,366	11.9%	2,690	20.1%	2,312	12.9%
50-64 years	115	70.6%	114	73.5%	9,238	80.3%	7,910	59.2%	14,025	78.5%
65-74 years										
≥ 75 years	78	47.9%	56	36.1%	5,449	47.4%	5,970	44.7%	8,909	49.8%
Sex	85	52.1%	99	63.9%	6,050	52.6%	7,389	55.3%	8,968	50.2%
Female										
Male	163	100.0%	0	0.0%	0	0.0%	0	0.0%	163	0.9%
Race <sup>2</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	608	3.4%
American Indian or Alaska Native	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5,452	30.5%
Asian	0	0.0%	155	100.0%	0	0.0%	0	0.0%	155	0.9%
Black or African American	0	0.0%	0	0.0%	0	0.0%	13,359	100.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	0	0.0%	0	0.0%	11,499	100.0%	0	0.0%	11,499	64.3%
Unknown										



**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
White	2,671	8.6%	76	12.5%	47	0.9%
Hispanic origin	11,151	35.7%	112	18.4%	3,824	70.1%
Yes	17,414	55.7%	420	69.1%	1,581	29.0%
No						
Unknown	1,871	6.0%	62	10.2%	399	7.3%
May 2020	1,032	3.3%	15	2.5%	247	4.5%
June 2020	1,186	3.8%	28	4.6%	254	4.7%
July 2020	2,874	9.2%	43	7.1%	629	11.5%
August 2020	1,770	5.7%	18	3.0%	375	6.9%
September 2020	1,224	3.9%	14	2.3%	196	3.6%
October 2020	2,046	6.6%	33	5.4%	295	5.4%
November 2020	4,347	13.9%	92	15.1%	610	11.2%
December 2020	5,473	17.5%	94	15.5%	817	15.0%
January 2021	4,981	15.9%	110	18.1%	867	15.9%
February 2021	2,389	7.6%	50	8.2%	441	8.1%
March 2021	2,043	6.5%	49	8.1%	322	5.9%
Census Bureau (CB) Region						
Midwest	4,894	15.7%	49	8.1%	713	13.1%
Northeast	4,273	13.7%	140	23.0%	512	9.4%
South	17,161	54.9%	166	27.3%	3,961	72.7%
West	4,801	15.4%	249	41.0%	262	4.8%
CB Region (Invalid)	17	0.1%	0	0.0%	2	0.0%
CB Region (Missing)	30	0.1%	0	0.0%	2	0.0%

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
White	35	21.5%	7	4.5%	199	1.7%	2,307	17.3%	364	2.0%
Hispanic origin	86	52.8%	100	64.5%	6,993	60.8%	36	0.3%	11,115	62.2%
Yes	42	25.8%	48	31.0%	4,307	37.5%	11,016	82.5%	6,398	35.8%
No										
Unknown	10	6.1%	12	7.7%	459	4.0%	929	7.0%	942	5.3%
May 2020	7	4.3%	5	3.2%	292	2.5%	466	3.5%	566	3.2%
June 2020	5	3.1%	7	4.5%	308	2.7%	584	4.4%	602	3.4%
July 2020	15	9.2%	14	9.0%	806	7.0%	1,367	10.2%	1,507	8.4%
August 2020	9	5.5%	9	5.8%	590	5.1%	769	5.8%	1,001	5.6%
September 2020	4	2.5%	4	2.6%	467	4.1%	539	4.0%	685	3.8%
October 2020	10	6.1%	13	8.4%	825	7.2%	870	6.5%	1,176	6.6%
November 2020	26	16.0%	25	16.1%	1,789	15.6%	1,805	13.5%	2,542	14.2%
December 2020	23	14.1%	23	14.8%	2,236	19.4%	2,280	17.1%	3,193	17.9%
January 2021	33	20.2%	22	14.2%	1,997	17.4%	1,952	14.6%	3,029	16.9%
February 2021	11	6.7%	14	9.0%	947	8.2%	926	6.9%	1,463	8.2%
March 2021	10	6.1%	7	4.5%	783	6.8%	872	6.5%	1,171	6.6%
Census Bureau (CB) Region										
Midwest	15	9.2%	21	13.5%	2,184	19.0%	1,912	14.3%	2,982	16.7%
Northeast	5	3.1%	17	11.0%	1,382	12.0%	2,217	16.6%	2,056	11.5%
South	72	44.2%	61	39.4%	6,244	54.3%	6,657	49.8%	10,504	58.8%
West	71	43.6%	45	29.0%	1,672	14.5%	2,502	18.7%	2,299	12.9%
CB Region (Invalid)	0	0.0%	1	0.6%	9	0.1%	5	0.0%	12	0.1%
CB Region (Missing)	0	0.0%	0	0.0%	8	0.1%	20	0.1%	10	0.1%

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	60	0.2%	4	0.7%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	21,518	68.9%	563	92.6%	3,949	72.4%
Suburban (population 2,500 - 49,999)	357	1.1%	2	0.3%	74	1.4%
Rural (population < 2,500)	9,254	29.6%	39	6.4%	1,425	26.1%
Zip Code Unknown or Urbanicity Not Available	107	0.3%	4	0.7%	4	0.1%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	61,066.7	23,018.6	78,859.4	26,842.8	50,825.9	19,363.7
Average Median Home Value <sup>3</sup>	215,716.0	147,133.0	362,073.8	234,367.8	168,091.2	103,400.6
Average Percent Unemployment <sup>3</sup>	5.9	3.1	5.0	1.9	7.5	3.8
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	29,316	93.9%	534	87.8%	5,292	97.1%
Median Home Value Available	29,293	93.8%	534	87.8%	5,285	96.9%
Percent Unemployment Available	29,358	94.0%	534	87.8%	5,296	97.1%
All SES Indicators Available	29,267	93.7%	534	87.8%	5,285	96.9%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	269	0.9%	1	0.2%	70	1.3%
Adult BMI 20-29	2,146	6.9%	44	7.2%	430	7.9%
Adult BMI 30-39	4,984	16.0%	52	8.6%	1,129	20.7%
Adult BMI 40 or greater	4,446	14.2%	23	3.8%	1,181	21.7%
Alcohol or Drug Abuse	2,076	6.6%	8	1.3%	427	7.8%

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Other)	0	0.0%	10	6.5%	0	0.0%	46	0.3%	14	0.1%
Urbanicity										
Urban (population >= 50,000)	98	60.1%	121	78.1%	6,587	57.3%	10,200	76.4%	11,318	63.3%
Suburban (population 2,500 - 49,999)	2	1.2%	2	1.3%	157	1.4%	120	0.9%	237	1.3%
Rural (population < 2,500)	63	38.7%	21	13.5%	4,738	41.2%	2,968	22.2%	6,286	35.2%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	11	7.1%	17	0.1%	71	0.5%	36	0.2%
Proxies for Socioeconomic Status (SES)										
Average Median Household Income <sup>3</sup>	56,878.6	19,332.8	63,251.5	23,727.5	62,288.8	21,413.4	63,647.3	24,492.2	59,200.8	21,569.2
Average Median Home Value <sup>3</sup>	190,392.4	104,155.7	263,936.4	181,161.2	204,220.3	131,045.3	239,825.9	166,321.6	198,291.5	130,551.8
Average Percent Unemployment <sup>3</sup>	6.5	4.2	5.6	2.2	5.4	2.6	5.8	2.9	6.1	3.1
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	158	96.9%	134	86.5%	10,892	94.7%	12,306	92.1%	17,010	95.2%
Median Home Value Available	158	96.9%	135	87.1%	10,890	94.7%	12,291	92.0%	17,002	95.1%
Percent Unemployment Available	159	97.5%	135	87.1%	10,912	94.9%	12,322	92.2%	17,036	95.3%
All SES Indicators Available	158	96.9%	134	86.5%	10,876	94.6%	12,280	91.9%	16,987	95.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	1	0.6%	1	0.6%	123	1.1%	73	0.5%	196	1.1%
Adult BMI 20-29	5	3.1%	17	11.0%	898	7.8%	752	5.6%	1,394	7.8%
Adult BMI 30-39	20	12.3%	28	18.1%	2,097	18.2%	1,658	12.4%	3,326	18.6%
Adult BMI 40 or greater	24	14.7%	12	7.7%	1,892	16.5%	1,314	9.8%	3,132	17.5%
Alcohol or Drug Abuse	15	9.2%	17	11.0%	1,048	9.1%	561	4.2%	1,515	8.5%

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Alcohol Use Abuse	1,170	3.7%	7	1.2%	221	4.1%
Any Cancer	2,273	7.3%	27	4.4%	459	8.4%
Asthma	4,021	12.9%	59	9.7%	945	17.3%
Autoimmune Conditions	1,753	5.6%	10	1.6%	456	8.4%
Blood Stem Cell Transplant	5	0.0%	0	0.0%	0	0.0%
Chronic Kidney Disease	6,512	20.8%	78	12.8%	1,818	33.3%
Congestive Heart Failure	4,391	14.1%	23	3.8%	1,340	24.6%
Chronic Obstructive Pulmonary Disease (COPD)	5,114	16.4%	29	4.8%	1,076	19.7%
Coronary Artery Disease	6,094	19.5%	52	8.6%	1,472	27.0%
Cystic Fibrosis	16	0.1%	0	0.0%	1	0.0%
Diabetes Mellitus	12,422	39.8%	189	31.1%	3,030	55.6%
Drug Abuse Dependence	1,201	3.8%	3	0.5%	269	4.9%
HIV	273	0.9%	4	0.7%	116	2.1%
Hypertension	17,947	57.5%	253	41.6%	4,241	77.8%
Interstitial Lung Disease	604	1.9%	3	0.5%	159	2.9%
Liver Disease	2,979	9.5%	34	5.6%	467	8.6%
Neurologic Conditions	4,108	13.2%	30	4.9%	886	16.3%
Obesity	12,086	38.7%	121	19.9%	2,850	52.3%
Pulmonary Conditions	7,365	23.6%	133	21.9%	1,267	23.2%
Sickle Cell Disease	185	0.6%	1	0.2%	125	2.3%
Smoking	6,351	20.3%	44	7.2%	1,315	24.1%
Solid Organ or Stem Cell Transplant	119	0.4%	4	0.7%	26	0.5%

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Alcohol Use Abuse	10	6.1%	7	4.5%	586	5.1%	339	2.5%	831	4.6%
Any Cancer	13	8.0%	6	3.9%	1,022	8.9%	746	5.6%	1,527	8.5%
Asthma	27	16.6%	17	11.0%	1,621	14.1%	1,352	10.1%	2,669	14.9%
Autoimmune Conditions	16	9.8%	13	8.4%	798	6.9%	460	3.4%	1,293	7.2%
Blood Stem Cell Transplant	0	0.0%	0	0.0%	3	0.0%	2	0.0%	3	0.0%
Chronic Kidney Disease	34	20.9%	38	24.5%	2,845	24.7%	1,699	12.7%	4,813	26.9%
Congestive Heart Failure	21	12.9%	21	13.5%	2,045	17.8%	941	7.0%	3,450	19.3%
Chronic Obstructive Pulmonary Disease (COPD)	28	17.2%	19	12.3%	2,845	24.7%	1,117	8.4%	3,997	22.4%
Coronary Artery Disease	29	17.8%	35	22.6%	3,000	26.1%	1,506	11.3%	4,588	25.7%
Cystic Fibrosis	0	0.0%	0	0.0%	10	0.1%	5	0.0%	11	0.1%
Diabetes Mellitus	78	47.9%	71	45.8%	5,067	44.1%	3,987	29.8%	8,435	47.2%
Drug Abuse Dependence	7	4.3%	11	7.1%	611	5.3%	300	2.2%	901	5.0%
HIV	0	0.0%	0	0.0%	69	0.6%	84	0.6%	189	1.1%
Hypertension	96	58.9%	91	58.7%	7,425	64.6%	5,841	43.7%	12,106	67.7%
Interstitial Lung Disease	3	1.8%	3	1.9%	275	2.4%	161	1.2%	443	2.5%
Liver Disease	23	14.1%	21	13.5%	1,431	12.4%	1,003	7.5%	1,976	11.1%
Neurologic Conditions	18	11.0%	30	19.4%	2,175	18.9%	969	7.3%	3,139	17.6%
Obesity	64	39.3%	57	36.8%	4,967	43.2%	4,027	30.1%	8,059	45.1%
Pulmonary Conditions	43	26.4%	36	23.2%	2,858	24.9%	3,028	22.7%	4,337	24.3%
Sickle Cell Disease	1	0.6%	0	0.0%	2	0.0%	56	0.4%	129	0.7%
Smoking	33	20.2%	34	21.9%	3,271	28.4%	1,654	12.4%	4,697	26.3%
Solid Organ or Stem Cell Transplant	0	0.0%	2	1.3%	49	0.4%	38	0.3%	81	0.5%

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Solid Organ Transplant	114	0.4%	4	0.7%	26	0.5%
Vascular Disease	19,722	63.1%	265	43.6%	4,445	81.5%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	973	3.1%	10	1.6%	205	3.8%
Glucocorticoids Inhaled	3,516	11.3%	40	6.6%	673	12.3%
Glucocorticoids NonSystemic	5,537	17.7%	78	12.8%	1,094	20.1%
Glucocorticoids Ophthalmic	379	1.2%	8	1.3%	86	1.6%
Glucocorticoids Systemic	13,085	41.9%	180	29.6%	2,346	43.0%
Glucocorticoids Topical	2,101	6.7%	35	5.8%	439	8.1%
Immune Modulators	2,011	6.4%	32	5.3%	454	8.3%
Immunosuppressants	1,340	4.3%	13	2.1%	327	6.0%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	2,537	8.1%	38	6.3%	451	8.3%
Angiotensin receptor blockers (ARBs)	2,274	7.3%	43	7.1%	533	9.8%
Vasopressors	440	1.4%	8	1.3%	88	1.6%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.1	2.9	0.9	1.9	2.9	3.2
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	8,020	25.7%	202	33.2%	1,363	25.0%
Diarrhea	3,176	10.2%	69	11.3%	606	11.1%
Dyspnea/Short of Breath	23,057	73.8%	445	73.2%	4,092	75.1%
Fever	7,778	24.9%	193	31.7%	1,395	25.6%

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Solid Organ Transplant	0	0.0%	2	1.3%	46	0.4%	36	0.3%	78	0.4%
Vascular Disease	107	65.6%	102	65.8%	8,176	71.1%	6,627	49.6%	13,095	73.3%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	6	3.7%	3	1.9%	411	3.6%	338	2.5%	635	3.6%
Glucocorticoids Inhaled	12	7.4%	11	7.1%	1,692	14.7%	1,088	8.1%	2,428	13.6%
Glucocorticoids NonSystemic	25	15.3%	25	16.1%	2,464	21.4%	1,851	13.9%	3,686	20.6%
Glucocorticoids Ophthalmic	2	1.2%	3	1.9%	143	1.2%	137	1.0%	242	1.4%
Glucocorticoids Systemic	74	45.4%	53	34.2%	5,556	48.3%	4,876	36.5%	8,209	45.9%
Glucocorticoids Topical	14	8.6%	14	9.0%	861	7.5%	738	5.5%	1,363	7.6%
Immune Modulators	12	7.4%	12	7.7%	841	7.3%	660	4.9%	1,351	7.6%
Immunosuppressants	10	6.1%	12	7.7%	587	5.1%	391	2.9%	949	5.3%
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	22	13.5%	13	8.4%	1,045	9.1%	968	7.2%	1,569	8.8%
Angiotensin receptor blockers (ARBs)	13	8.0%	8	5.2%	814	7.1%	863	6.5%	1,411	7.9%
Vasopressors	1	0.6%	1	0.6%	193	1.7%	149	1.1%	291	1.6%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.0	2.7	2.2	3.1	2.7	3.1	1.3	2.4	2.7	3.1
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	37	22.7%	43	27.7%	2,798	24.3%	3,577	26.8%	4,443	24.9%
Diarrhea	20	12.3%	13	8.4%	1,218	10.6%	1,250	9.4%	1,926	10.8%
Dyspnea/Short of Breath	122	74.8%	111	71.6%	8,655	75.3%	9,632	72.1%	13,425	75.1%
Fever	36	22.1%	41	26.5%	2,633	22.9%	3,480	26.0%	4,298	24.0%



**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Headache	555	1.8%	11	1.8%	106	1.9%
Malaise or Fatigue	6,031	19.3%	93	15.3%	1,240	22.7%
Multisystem Inflammatory Syndrome	48	0.2%	0	0.0%	9	0.2%
Myalgia	744	2.4%	8	1.3%	122	2.2%
Nasal Congestion	195	0.6%	2	0.3%	35	0.6%
Nausea or Vomiting	3,594	11.5%	35	5.8%	746	13.7%
Smell or Taste Disturbance	367	1.2%	4	0.7%	76	1.4%
Sore Throat	361	1.2%	9	1.5%	66	1.2%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.1	17.9	10.0	15.7	16.3	21.8
Mean number of emergency room encounters	1.5	3.3	0.9	2.7	1.9	4.0
Mean number of inpatient hospital encounters	0.3	0.9	0.1	0.5	0.4	0.9
Mean number of non-acute institutional encounters	0.1	0.4	0.0	0.2	0.1	0.4
Mean number of other ambulatory encounters	3.3	9.0	2.0	5.5	4.2	10.2
Mean number of filled prescriptions	20.6	20.9	11.4	13.4	24.5	21.0
Mean number of generics dispensed	8.7	6.6	5.5	5.1	10.5	6.6

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Headache	2	1.2%	4	2.6%	165	1.4%	267	2.0%	288	1.6%
Malaise or Fatigue	26	16.0%	36	23.2%	2,510	21.8%	2,126	15.9%	3,905	21.8%
Multisystem Inflammatory Syndrome	0	0.0%	0	0.0%	8	0.1%	31	0.2%	17	0.1%
Myalgia	4	2.5%	6	3.9%	276	2.4%	328	2.5%	416	2.3%
Nasal Congestion	0	0.0%	1	0.6%	68	0.6%	89	0.7%	106	0.6%
Nausea or Vomiting	20	12.3%	14	9.0%	1,390	12.1%	1,389	10.4%	2,205	12.3%
Smell or Taste Disturbance	2	1.2%	1	0.6%	125	1.1%	159	1.2%	208	1.2%
Sore Throat	1	0.6%	1	0.6%	117	1.0%	167	1.3%	194	1.1%
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory encounters	12.3	16.7	16.2	21.6	15.2	18.3	10.0	15.3	15.3	19.4
Mean number of emergency room encounters	1.8	5.1	1.6	2.9	1.8	3.8	1.1	2.4	1.8	3.8
Mean number of inpatient hospital encounters	0.4	1.0	0.3	0.9	0.4	1.0	0.2	0.7	0.4	1.0
Mean number of non-acute institutional encounters	0.1	0.3	0.1	0.5	0.1	0.5	0.0	0.3	0.1	0.5
Mean number of other ambulatory encounters	3.6	7.7	3.4	7.9	4.6	10.5	1.8	6.9	4.3	10.3
Mean number of filled prescriptions	21.6	20.1	18.5	16.5	26.5	23.1	14.3	17.6	25.3	22.2
Mean number of generics dispensed	8.8	6.3	8.6	6.1	10.8	6.9	6.4	5.8	10.5	6.8

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of unique drug classes dispensed	8.1	5.9	5.1	4.6	9.6	5.8
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	31,236	100.0%	608	100.0%	5,452	100.0%
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	128	0.4%	7	1.2%	11	0.2%
Intensive Care	15,915	51.0%	303	49.8%	2,875	52.7%
Mechanical Ventilation	4,967	15.9%	86	14.1%	939	17.2%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	968	3.1%	11	1.8%	327	6.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1t. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of unique drug classes dispensed	8.1	5.7	7.9	5.4	9.9	6.1	5.9	5.3	9.6	6.0
<b>COVID Diagnosis (-7, 7)</b>										
Diagnosis Code for COVID-19	163	100.0%	155	100.0%	11,499	100.0%	13,359	100.0%	17,877	100.0%
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	0	0.0%	0	0.0%	28	0.2%	82	0.6%	46	0.3%
Intensive Care	81	49.7%	85	54.8%	5,896	51.3%	6,675	50.0%	9,240	51.7%
Mechanical Ventilation	30	18.4%	25	16.1%	2,079	18.1%	1,808	13.5%	3,159	17.7%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	1	0.6%	3	1.9%	336	2.9%	290	2.2%	678	3.8%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1u. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	487,040	N/A	30,184	N/A	456,856	N/A
<b>Demographic Characteristics</b>						
Age (years)	40.4	15.6	53.1	10.6	39.5	15.6
Age						
0-5 years	8,231	1.7%	72	0.2%	8,159	1.8%
6-11 years	12,438	2.6%	40	0.1%	12,398	2.7%
12-18 years	31,580	6.5%	165	0.5%	31,415	6.9%
19-29 years	89,419	18.4%	1,178	3.9%	88,241	19.3%
30-39 years	86,781	17.8%	2,586	8.6%	84,195	18.4%
40-49 years	90,333	18.5%	4,845	16.1%	85,488	18.7%
50-64 years	168,258	34.5%	21,298	70.6%	146,960	32.2%
65-74 years						
≥ 75 years	260,250	53.4%	14,308	47.4%	245,942	53.8%
Sex	226,790	46.6%	15,876	52.6%	210,914	46.2%
Female						
Male	1,740	0.4%	157	0.5%	1,583	0.3%
Race <sup>2</sup>	12,360	2.5%	582	1.9%	11,778	2.6%
American Indian or Alaska Native	32,199	6.6%	5,304	17.6%	26,895	5.9%
Asian	1,195	0.2%	145	0.5%	1,050	0.2%
Black or African American	286,937	58.9%	12,902	42.7%	274,035	60.0%
Native Hawaiian or Other Pacific Islander	152,609	31.3%	11,094	36.8%	141,515	31.0%
Unknown						
White	41,985	8.6%	2,557	8.5%	39,428	8.6%

**Table 1u. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	60,060	12.3%	10,791	35.8%	49,269	10.8%
Yes	384,995	79.0%	16,836	55.8%	368,159	80.6%
No						
Unknown	14,509	3.0%	1,955	6.5%	12,554	2.7%
May 2020	12,567	2.6%	979	3.2%	11,588	2.5%
June 2020	21,283	4.4%	1,306	4.3%	19,977	4.4%
July 2020	39,597	8.1%	2,836	9.4%	36,761	8.0%
August 2020	24,737	5.1%	1,602	5.3%	23,135	5.1%
September 2020	22,635	4.6%	1,193	4.0%	21,442	4.7%
October 2020	36,666	7.5%	2,122	7.0%	34,544	7.6%
November 2020	75,617	15.5%	4,403	14.6%	71,214	15.6%
December 2020	95,338	19.6%	5,437	18.0%	89,901	19.7%
January 2021	78,532	16.1%	4,530	15.0%	74,002	16.2%
February 2021	34,152	7.0%	2,084	6.9%	32,068	7.0%
March 2021	31,407	6.4%	1,737	5.8%	29,670	6.5%
Census Bureau (CB) Region						
Midwest	65,563	13.5%	4,747	15.7%	60,816	13.3%
Northeast	107,396	22.1%	4,079	13.5%	103,317	22.6%
South	215,688	44.3%	16,628	55.1%	199,060	43.6%
West	96,999	19.9%	4,628	15.3%	92,371	20.2%
CB Region (Invalid)	335	0.1%	14	0.0%	321	0.1%
CB Region (Missing)	608	0.1%	28	0.1%	580	0.1%
CB Region (Other)	451	0.1%	60	0.2%	391	0.1%
Urbanicity						

**Table 1u. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Urban (population >= 50,000)	370,526	76.1%	20,764	68.8%	349,762	76.6%
Suburban (population 2,500 - 49,999)	3,838	0.8%	345	1.1%	3,493	0.8%
Rural (population < 2,500)	111,285	22.8%	8,973	29.7%	102,312	22.4%
Zip Code Unknown or Urbanicity Not Available	1,391	0.3%	102	0.3%	1,289	0.3%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	73,217.1	29,065.0	60,995.4	22,955.7	74,076.9	29,350.6
Average Median Home Value <sup>3</sup>	297,606.4	229,648.6	215,125.9	146,091.7	303,407.0	233,895.1
Average Percent Unemployment <sup>3</sup>	5.1	2.5	5.9	3.1	5.0	2.5
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	431,454	88.6%	28,366	94.0%	403,088	88.2%
Median Home Value Available	431,339	88.6%	28,345	93.9%	402,994	88.2%
Percent Unemployment Available	431,951	88.7%	28,406	94.1%	403,545	88.3%
All SES Indicators Available	431,049	88.5%	28,320	93.8%	402,729	88.2%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,780	0.4%	246	0.8%	1,534	0.3%
Adult BMI 20-29	26,611	5.5%	2,012	6.7%	24,599	5.4%
Adult BMI 30-39	34,971	7.2%	4,675	15.5%	30,296	6.6%
Adult BMI 40 or greater	19,641	4.0%	4,083	13.5%	15,558	3.4%
Alcohol or Drug Abuse	10,405	2.1%	1,908	6.3%	8,497	1.9%
Alcohol Use Abuse	6,114	1.3%	1,068	3.5%	5,046	1.1%
Any Cancer	12,372	2.5%	2,148	7.1%	10,224	2.2%
Asthma	27,780	5.7%	3,530	11.7%	24,250	5.3%
Autoimmune Conditions	9,411	1.9%	1,655	5.5%	7,756	1.7%
Blood Stem Cell Transplant	36	0.0%	7	0.0%	29	0.0%

**Table 1u. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Chronic Kidney Disease	20,546	4.2%	6,052	20.1%	14,494	3.2%
Congestive Heart Failure	10,875	2.2%	4,054	13.4%	6,821	1.5%
Chronic Obstructive Pulmonary Disease (COPD)	17,756	3.6%	4,648	15.4%	13,108	2.9%
Coronary Artery Disease	22,122	4.5%	5,627	18.6%	16,495	3.6%
Cystic Fibrosis	91	0.0%	14	0.0%	77	0.0%
Diabetes Mellitus	55,624	11.4%	11,732	38.9%	43,892	9.6%
Drug Abuse Dependence	5,538	1.1%	1,114	3.7%	4,424	1.0%
HIV	1,942	0.4%	253	0.8%	1,689	0.4%
Hypertension	101,897	20.9%	16,694	55.3%	85,203	18.6%
Interstitial Lung Disease	1,644	0.3%	509	1.7%	1,135	0.2%
Liver Disease	14,742	3.0%	2,705	9.0%	12,037	2.6%
Neurologic Conditions	20,488	4.2%	3,842	12.7%	16,646	3.6%
Obesity	74,270	15.2%	11,250	37.3%	63,020	13.8%
Pulmonary Conditions	12,039	2.5%	3,633	12.0%	8,406	1.8%
Sickle Cell Disease	566	0.1%	173	0.6%	393	0.1%
Smoking	30,870	6.3%	5,524	18.3%	25,346	5.5%
Solid Organ or Stem Cell Transplant	355	0.1%	115	0.4%	240	0.1%
Solid Organ Transplant	319	0.1%	108	0.4%	211	0.0%
Vascular Disease	118,527	24.3%	18,215	60.3%	100,312	22.0%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,208	0.9%	938	3.1%	3,270	0.7%
Glucocorticoids Inhaled	18,934	3.9%	3,096	10.3%	15,838	3.5%
Glucocorticoids NonSystemic	41,661	8.6%	5,078	16.8%	36,583	8.0%
Glucocorticoids Ophthalmic	2,732	0.6%	367	1.2%	2,365	0.5%



**Table 1u. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Systemic	88,658	18.2%	10,700	35.4%	77,958	17.1%
Glucocorticoids Topical	22,157	4.5%	2,046	6.8%	20,111	4.4%
Immune Modulators	9,270	1.9%	1,929	6.4%	7,341	1.6%
Immunosuppressants	6,598	1.4%	1,299	4.3%	5,299	1.2%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	18,495	3.8%	2,494	8.3%	16,001	3.5%
Angiotensin receptor blockers (ARBs)	16,089	3.3%	2,247	7.4%	13,842	3.0%
Vasopressors	570	0.1%	297	1.0%	273	0.1%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.4	2.0	2.9	0.4	1.2
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	85,966	17.7%	10,228	33.9%	75,738	16.6%
Diarrhea	12,058	2.5%	3,399	11.3%	8,659	1.9%
Dyspnea/Short of Breath	57,288	11.8%	22,524	74.6%	34,764	7.6%
Fever	49,696	10.2%	9,265	30.7%	40,431	8.8%
Headache	6,581	1.4%	727	2.4%	5,854	1.3%
Malaise or Fatigue	34,806	7.1%	6,300	20.9%	28,506	6.2%
Multisystem Inflammatory Syndrome	54	0.0%	40	0.1%	14	0.0%
Myalgia	13,762	2.8%	1,283	4.3%	12,479	2.7%
Nasal Congestion	14,334	2.9%	467	1.5%	13,867	3.0%
Nausea or Vomiting	15,635	3.2%	3,957	13.1%	11,678	2.6%
Smell or Taste Disturbance	12,808	2.6%	539	1.8%	12,269	2.7%
Sore Throat	22,063	4.5%	748	2.5%	21,315	4.7%

**Table 1u. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	6.3	9.5	12.4	17.9	5.9	8.6
Mean number of emergency room encounters	0.3	1.3	1.1	3.1	0.2	1.1
Mean number of inpatient hospital encounters	0.1	0.3	0.3	0.9	0.0	0.2
Mean number of non-acute institutional encounters	0.0	0.2	0.1	0.4	0.0	0.1
Mean number of other ambulatory encounters	0.9	4.1	3.0	8.7	0.7	3.5
Mean number of filled prescriptions	8.2	12.8	20.0	20.8	7.4	11.8
Mean number of generics dispensed	3.6	4.5	8.3	6.5	3.3	4.2
Mean number of unique drug classes dispensed	3.4	4.1	7.6	5.9	3.1	3.8
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	383,876	78.8%	29,613	98.1%	354,263	77.5%

**Table 1u. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	60	0.0%	60	0.2%	0	0.0%
Intensive Care	9,277	1.9%	8,955	29.7%	322	0.1%
Mechanical Ventilation	3,092	0.6%	3,004	10.0%	88	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	663	0.1%	651	2.2%	12	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1v. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	487,040	N/A	14,474	N/A	472,566	N/A
<b>Demographic Characteristics</b>						
Age (years)	40.4	15.6	51.7	11.4	40.0	15.6
Age						
0-5 years	8,231	1.7%	47	0.3%	8,184	1.7%
6-11 years	12,438	2.6%	26	0.2%	12,412	2.6%
12-18 years	31,580	6.5%	109	0.8%	31,471	6.7%
19-29 years	89,419	18.4%	774	5.3%	88,645	18.8%
30-39 years	86,781	17.8%	1,550	10.7%	85,231	18.0%
40-49 years	90,333	18.5%	2,402	16.6%	87,931	18.6%
50-64 years	168,258	34.5%	9,566	66.1%	158,692	33.6%
65-74 years						
≥ 75 years	260,250	53.4%	7,465	51.6%	252,785	53.5%
Sex	226,790	46.6%	7,009	48.4%	219,781	46.5%
Female						
Male	1,740	0.4%	75	0.5%	1,665	0.4%
Race <sup>2</sup>	12,360	2.5%	283	2.0%	12,077	2.6%
American Indian or Alaska Native	32,199	6.6%	2,423	16.7%	29,776	6.3%
Asian	1,195	0.2%	63	0.4%	1,132	0.2%
Black or African American	286,937	58.9%	6,362	44.0%	280,575	59.4%
Native Hawaiian or Other Pacific Islander	152,609	31.3%	5,268	36.4%	147,341	31.2%
Unknown						
White	41,985	8.6%	1,204	8.3%	40,781	8.6%

**Table 1v. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	60,060	12.3%	4,885	33.8%	55,175	11.7%
Yes	384,995	79.0%	8,385	57.9%	376,610	79.7%
No						
Unknown	14,509	3.0%	882	6.1%	13,627	2.9%
May 2020	12,567	2.6%	435	3.0%	12,132	2.6%
June 2020	21,283	4.4%	531	3.7%	20,752	4.4%
July 2020	39,597	8.1%	1,242	8.6%	38,355	8.1%
August 2020	24,737	5.1%	732	5.1%	24,005	5.1%
September 2020	22,635	4.6%	544	3.8%	22,091	4.7%
October 2020	36,666	7.5%	1,010	7.0%	35,656	7.5%
November 2020	75,617	15.5%	2,173	15.0%	73,444	15.5%
December 2020	95,338	19.6%	2,720	18.8%	92,618	19.6%
January 2021	78,532	16.1%	2,272	15.7%	76,260	16.1%
February 2021	34,152	7.0%	1,037	7.2%	33,115	7.0%
March 2021	31,407	6.4%	896	6.2%	30,511	6.5%
Census Bureau (CB) Region						
Midwest	65,563	13.5%	2,321	16.0%	63,242	13.4%
Northeast	107,396	22.1%	2,222	15.4%	105,174	22.3%
South	215,688	44.3%	7,739	53.5%	207,949	44.0%
West	96,999	19.9%	2,144	14.8%	94,855	20.1%
CB Region (Invalid)	335	0.1%	7	0.0%	328	0.1%
CB Region (Missing)	608	0.1%	18	0.1%	590	0.1%
CB Region (Other)	451	0.1%	23	0.2%	428	0.1%
Urbanicity						

**Table 1v. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Urban (population >= 50,000)	370,526	76.1%	9,756	67.4%	360,770	76.3%
Suburban (population 2,500 - 49,999)	3,838	0.8%	149	1.0%	3,689	0.8%
Rural (population < 2,500)	111,285	22.8%	4,521	31.2%	106,764	22.6%
Zip Code Unknown or Urbanicity Not Available	1,391	0.3%	48	0.3%	1,343	0.3%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	73,217.1	29,065.0	62,340.4	23,991.0	73,569.6	29,182.0
Average Median Home Value <sup>3</sup>	297,606.4	229,648.6	223,010.6	157,691.7	300,023.9	231,429.4
Average Percent Unemployment <sup>3</sup>	5.1	2.5	5.8	3.1	5.1	2.5
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	431,454	88.6%	13,546	93.6%	417,908	88.4%
Median Home Value Available	431,339	88.6%	13,542	93.6%	417,797	88.4%
Percent Unemployment Available	431,951	88.7%	13,566	93.7%	418,385	88.5%
All SES Indicators Available	431,049	88.5%	13,530	93.5%	417,519	88.4%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,780	0.4%	103	0.7%	1,677	0.4%
Adult BMI 20-29	26,611	5.5%	907	6.3%	25,704	5.4%
Adult BMI 30-39	34,971	7.2%	2,152	14.9%	32,819	6.9%
Adult BMI 40 or greater	19,641	4.0%	1,781	12.3%	17,860	3.8%
Alcohol or Drug Abuse	10,405	2.1%	831	5.7%	9,574	2.0%
Alcohol Use Abuse	6,114	1.3%	443	3.1%	5,671	1.2%
Any Cancer	12,372	2.5%	1,011	7.0%	11,361	2.4%
Asthma	27,780	5.7%	1,723	11.9%	26,057	5.5%
Autoimmune Conditions	9,411	1.9%	778	5.4%	8,633	1.8%
Blood Stem Cell Transplant	36	0.0%	3	0.0%	33	0.0%

**Table 1v. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Chronic Kidney Disease	20,546	4.2%	2,404	16.6%	18,142	3.8%
Congestive Heart Failure	10,875	2.2%	1,497	10.3%	9,378	2.0%
Chronic Obstructive Pulmonary Disease (COPD)	17,756	3.6%	1,922	13.3%	15,834	3.4%
Coronary Artery Disease	22,122	4.5%	2,212	15.3%	19,910	4.2%
Cystic Fibrosis	91	0.0%	9	0.1%	82	0.0%
Diabetes Mellitus	55,624	11.4%	4,984	34.4%	50,640	10.7%
Drug Abuse Dependence	5,538	1.1%	519	3.6%	5,019	1.1%
HIV	1,942	0.4%	120	0.8%	1,822	0.4%
Hypertension	101,897	20.9%	7,339	50.7%	94,558	20.0%
Interstitial Lung Disease	1,644	0.3%	180	1.2%	1,464	0.3%
Liver Disease	14,742	3.0%	1,208	8.3%	13,534	2.9%
Neurologic Conditions	20,488	4.2%	1,728	11.9%	18,760	4.0%
Obesity	74,270	15.2%	5,144	35.5%	69,126	14.6%
Pulmonary Conditions	12,039	2.5%	1,371	9.5%	10,668	2.3%
Sickle Cell Disease	566	0.1%	88	0.6%	478	0.1%
Smoking	30,870	6.3%	2,471	17.1%	28,399	6.0%
Solid Organ or Stem Cell Transplant	355	0.1%	48	0.3%	307	0.1%
Solid Organ Transplant	319	0.1%	45	0.3%	274	0.1%
Vascular Disease	118,527	24.3%	8,061	55.7%	110,466	23.4%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	4,208	0.9%	427	3.0%	3,781	0.8%
Glucocorticoids Inhaled	18,934	3.9%	1,354	9.4%	17,580	3.7%
Glucocorticoids NonSystemic	41,661	8.6%	2,297	15.9%	39,364	8.3%
Glucocorticoids Ophthalmic	2,732	0.6%	164	1.1%	2,568	0.5%

**Table 1v. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Systemic	88,658	18.2%	5,068	35.0%	83,590	17.7%
Glucocorticoids Topical	22,157	4.5%	954	6.6%	21,203	4.5%
Immune Modulators	9,270	1.9%	886	6.1%	8,384	1.8%
Immunosuppressants	6,598	1.4%	579	4.0%	6,019	1.3%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	18,495	3.8%	1,135	7.8%	17,360	3.7%
Angiotensin receptor blockers (ARBs)	16,089	3.3%	1,011	7.0%	15,078	3.2%
Vasopressors	570	0.1%	35	0.2%	535	0.1%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.4	1.7	2.6	0.4	1.4
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	85,966	17.7%	5,043	34.8%	80,923	17.1%
Diarrhea	12,058	2.5%	1,694	11.7%	10,364	2.2%
Dyspnea/Short of Breath	57,288	11.8%	10,123	69.9%	47,165	10.0%
Fever	49,696	10.2%	4,251	29.4%	45,445	9.6%
Headache	6,581	1.4%	328	2.3%	6,253	1.3%
Malaise or Fatigue	34,806	7.1%	2,844	19.6%	31,962	6.8%
Multisystem Inflammatory Syndrome	54	0.0%	16	0.1%	38	0.0%
Myalgia	13,762	2.8%	676	4.7%	13,086	2.8%
Nasal Congestion	14,334	2.9%	231	1.6%	14,103	3.0%
Nausea or Vomiting	15,635	3.2%	1,959	13.5%	13,676	2.9%
Smell or Taste Disturbance	12,808	2.6%	287	2.0%	12,521	2.6%
Sore Throat	22,063	4.5%	382	2.6%	21,681	4.6%



**Table 1v. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	6.3	9.5	11.1	14.1	6.2	9.3
Mean number of emergency room encounters	0.3	1.3	1.1	3.0	0.3	1.2
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.9	0.0	0.3
Mean number of non-acute institutional encounters	0.0	0.2	0.1	0.4	0.0	0.2
Mean number of other ambulatory encounters	0.9	4.1	2.6	7.9	0.8	3.9
Mean number of filled prescriptions	8.2	12.8	18.6	19.6	7.9	12.4
Mean number of generics dispensed	3.6	4.5	7.7	6.3	3.5	4.4
Mean number of unique drug classes dispensed	3.4	4.1	7.1	5.6	3.3	4.0
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	383,876	78.8%	14,169	97.9%	369,707	78.2%

**Table 1v. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	60	0.0%	0	0.0%	60	0.0%
Intensive Care	9,277	1.9%	174	1.2%	9,103	1.9%
Mechanical Ventilation	3,092	0.6%	35	0.2%	3,057	0.6%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	663	0.1%	11	0.1%	652	0.1%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1w. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	31,236	N/A	17,026	N/A	14,210	N/A
<b>Demographic Characteristics</b>						
Age (years)	52.9	10.7	54.3	9.7	51.3	11.7
Age						
0-5 years	78	0.2%	27	0.2%	51	0.4%
6-11 years	43	0.1%	16	0.1%	27	0.2%
12-18 years	187	0.6%	65	0.4%	122	0.9%
19-29 years	1,268	4.1%	438	2.6%	830	5.8%
30-39 years	2,723	8.7%	1,107	6.5%	1,616	11.4%
40-49 years	5,002	16.0%	2,638	15.5%	2,364	16.6%
50-64 years	21,935	70.2%	12,735	74.8%	9,200	64.7%
65-74 years						
≥ 75 years	14,879	47.6%	7,429	43.6%	7,450	52.4%
Sex	16,357	52.4%	9,597	56.4%	6,760	47.6%
Female						
Male	163	0.5%	88	0.5%	75	0.5%
Race <sup>2</sup>	608	1.9%	310	1.8%	298	2.1%
American Indian or Alaska Native	5,452	17.5%	3,148	18.5%	2,304	16.2%
Asian	155	0.5%	91	0.5%	64	0.5%
Black or African American	13,359	42.8%	6,986	41.0%	6,373	44.8%
Native Hawaiian or Other Pacific Islander	11,499	36.8%	6,403	37.6%	5,096	35.9%
Unknown						
White	2,671	8.6%	1,453	8.5%	1,218	8.6%

**Table 1w. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	11,151	35.7%	6,547	38.5%	4,604	32.4%
Yes	17,414	55.7%	9,026	53.0%	8,388	59.0%
No						
Unknown	1,871	6.0%	1,072	6.3%	799	5.6%
May 2020	1,032	3.3%	582	3.4%	450	3.2%
June 2020	1,186	3.8%	726	4.3%	460	3.2%
July 2020	2,874	9.2%	1,711	10.0%	1,163	8.2%
August 2020	1,770	5.7%	1,005	5.9%	765	5.4%
September 2020	1,224	3.9%	690	4.1%	534	3.8%
October 2020	2,046	6.6%	1,137	6.7%	909	6.4%
November 2020	4,347	13.9%	2,311	13.6%	2,036	14.3%
December 2020	5,473	17.5%	2,893	17.0%	2,580	18.2%
January 2021	4,981	15.9%	2,626	15.4%	2,355	16.6%
February 2021	2,389	7.6%	1,254	7.4%	1,135	8.0%
March 2021	2,043	6.5%	1,019	6.0%	1,024	7.2%
Census Bureau (CB) Region						
Midwest	4,894	15.7%	2,630	15.4%	2,264	15.9%
Northeast	4,273	13.7%	2,006	11.8%	2,267	16.0%
South	17,161	54.9%	9,673	56.8%	7,488	52.7%
West	4,801	15.4%	2,661	15.6%	2,140	15.1%
CB Region (Invalid)	17	0.1%	7	0.0%	10	0.1%
CB Region (Missing)	30	0.1%	11	0.1%	19	0.1%
CB Region (Other)	60	0.2%	38	0.2%	22	0.2%
Urbanicity						

**Table 1w. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Urban (population >= 50,000)	21,518	68.9%	11,859	69.7%	9,659	68.0%
Suburban (population 2,500 - 49,999)	357	1.1%	211	1.2%	146	1.0%
Rural (population < 2,500)	9,254	29.6%	4,900	28.8%	4,354	30.6%
Zip Code Unknown or Urbanicity Not Available	107	0.3%	56	0.3%	51	0.4%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	61,066.7	23,018.6	59,631.6	21,831.4	62,804.8	24,288.7
Average Median Home Value <sup>3</sup>	215,716.0	147,133.0	206,581.0	132,916.3	226,772.2	162,093.6
Average Percent Unemployment <sup>3</sup>	5.9	3.1	6.0	3.1	5.8	3.1
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	29,316	93.9%	16,060	94.3%	13,256	93.3%
Median Home Value Available	29,293	93.8%	16,040	94.2%	13,253	93.3%
Percent Unemployment Available	29,358	94.0%	16,083	94.5%	13,275	93.4%
All SES Indicators Available	29,267	93.7%	16,027	94.1%	13,240	93.2%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	269	0.9%	167	1.0%	102	0.7%
Adult BMI 20-29	2,146	6.9%	1,247	7.3%	899	6.3%
Adult BMI 30-39	4,984	16.0%	2,813	16.5%	2,171	15.3%
Adult BMI 40 or greater	4,446	14.2%	2,638	15.5%	1,808	12.7%
Alcohol or Drug Abuse	2,076	6.6%	1,238	7.3%	838	5.9%
Alcohol Use Abuse	1,170	3.7%	722	4.2%	448	3.2%
Any Cancer	2,273	7.3%	1,291	7.6%	982	6.9%
Asthma	4,021	12.9%	2,175	12.8%	1,846	13.0%
Autoimmune Conditions	1,753	5.6%	1,000	5.9%	753	5.3%
Blood Stem Cell Transplant	5	0.0%	2	0.0%	3	0.0%

**Table 1w. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Chronic Kidney Disease	6,512	20.8%	4,200	24.7%	2,312	16.3%
Congestive Heart Failure	4,391	14.1%	2,980	17.5%	1,411	9.9%
Chronic Obstructive Pulmonary Disease (COPD)	5,114	16.4%	3,196	18.8%	1,918	13.5%
Coronary Artery Disease	6,094	19.5%	3,939	23.1%	2,155	15.2%
Cystic Fibrosis	16	0.1%	6	0.0%	10	0.1%
Diabetes Mellitus	12,422	39.8%	7,561	44.4%	4,861	34.2%
Drug Abuse Dependence	1,201	3.8%	683	4.0%	518	3.6%
HIV	273	0.9%	149	0.9%	124	0.9%
Hypertension	17,947	57.5%	10,639	62.5%	7,308	51.4%
Interstitial Lung Disease	604	1.9%	414	2.4%	190	1.3%
Liver Disease	2,979	9.5%	1,745	10.2%	1,234	8.7%
Neurologic Conditions	4,108	13.2%	2,400	14.1%	1,708	12.0%
Obesity	12,086	38.7%	6,876	40.4%	5,210	36.7%
Pulmonary Conditions	7,365	23.6%	4,390	25.8%	2,975	20.9%
Sickle Cell Disease	185	0.6%	96	0.6%	89	0.6%
Smoking	6,351	20.3%	3,724	21.9%	2,627	18.5%
Solid Organ or Stem Cell Transplant	119	0.4%	76	0.4%	43	0.3%
Solid Organ Transplant	114	0.4%	74	0.4%	40	0.3%
Vascular Disease	19,722	63.1%	11,605	68.2%	8,117	57.1%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	973	3.1%	564	3.3%	409	2.9%
Glucocorticoids Inhaled	3,516	11.3%	2,081	12.2%	1,435	10.1%
Glucocorticoids NonSystemic	5,537	17.7%	3,201	18.8%	2,336	16.4%
Glucocorticoids Ophthalmic	379	1.2%	228	1.3%	151	1.1%

**Table 1w. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Systemic	13,085	41.9%	7,317	43.0%	5,768	40.6%
Glucocorticoids Topical	2,101	6.7%	1,178	6.9%	923	6.5%
Immune Modulators	2,011	6.4%	1,200	7.0%	811	5.7%
Immunosuppressants	1,340	4.3%	794	4.7%	546	3.8%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	2,537	8.1%	1,455	8.5%	1,082	7.6%
Angiotensin receptor blockers (ARBs)	2,274	7.3%	1,313	7.7%	961	6.8%
Vasopressors	440	1.4%	404	2.4%	36	0.3%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.1	2.9	2.4	3.1	1.7	2.6
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	8,020	25.7%	4,321	25.4%	3,699	26.0%
Diarrhea	3,176	10.2%	1,697	10.0%	1,479	10.4%
Dyspnea/Short of Breath	23,057	73.8%	13,448	79.0%	9,609	67.6%
Fever	7,778	24.9%	4,571	26.8%	3,207	22.6%
Headache	555	1.8%	310	1.8%	245	1.7%
Malaise or Fatigue	6,031	19.3%	3,562	20.9%	2,469	17.4%
Multisystem Inflammatory Syndrome	48	0.2%	28	0.2%	20	0.1%
Myalgia	744	2.4%	347	2.0%	397	2.8%
Nasal Congestion	195	0.6%	105	0.6%	90	0.6%
Nausea or Vomiting	3,594	11.5%	1,957	11.5%	1,637	11.5%
Smell or Taste Disturbance	367	1.2%	174	1.0%	193	1.4%
Sore Throat	361	1.2%	190	1.1%	171	1.2%

**Table 1w. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.1	17.9	14.4	20.7	11.4	13.6
Mean number of emergency room encounters	1.5	3.3	1.6	3.5	1.4	3.0
Mean number of inpatient hospital encounters	0.3	0.9	0.3	0.9	0.2	0.8
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.4	0.1	0.4
Mean number of other ambulatory encounters	3.3	9.0	3.7	9.8	2.7	8.0
Mean number of filled prescriptions	20.6	20.9	22.2	22.1	18.6	19.3
Mean number of generics dispensed	8.7	6.6	9.3	6.8	8.0	6.3
Mean number of unique drug classes dispensed	8.1	5.9	8.6	6.1	7.4	5.6



**Table 1w. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	31,236	100.0%	17,026	100.0%	14,210	100.0%
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	128	0.4%	128	0.8%	0	0.0%
Intensive Care	15,915	51.0%	15,915	93.5%	0	0.0%
Mechanical Ventilation	4,967	15.9%	4,967	29.2%	0	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	968	3.1%	968	5.7%	0	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1x. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	31,236	N/A	1,985	N/A	29,251	N/A
<b>Demographic Characteristics</b>						
Age (years)	52.9	10.7	57.7	7.0	52.6	10.9
Age						
0-5 years	78	0.2%	1	0.1%	77	0.3%
6-11 years	43	0.1%	0	0.0%	43	0.1%
12-18 years	187	0.6%	1	0.1%	186	0.6%
19-29 years	1,268	4.1%	10	0.5%	1,258	4.3%
30-39 years	2,723	8.7%	47	2.4%	2,676	9.1%
40-49 years	5,002	16.0%	205	10.3%	4,797	16.4%
50-64 years	21,935	70.2%	1,721	86.7%	20,214	69.1%
65-74 years						
≥ 75 years	14,879	47.6%	807	40.7%	14,072	48.1%
Sex	16,357	52.4%	1,178	59.3%	15,179	51.9%
Female						
Male	163	0.5%	15	0.8%	148	0.5%
Race <sup>2</sup>	608	1.9%	31	1.6%	577	2.0%
American Indian or Alaska Native	5,452	17.5%	397	20.0%	5,055	17.3%
Asian	155	0.5%	15	0.8%	140	0.5%
Black or African American	13,359	42.8%	681	34.3%	12,678	43.3%
Native Hawaiian or Other Pacific Islander	11,499	36.8%	846	42.6%	10,653	36.4%
Unknown						
White	2,671	8.6%	158	8.0%	2,513	8.6%
Hispanic origin	11,151	35.7%	992	50.0%	10,159	34.7%

**Table 1x. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Yes	17,414	55.7%	835	42.1%	16,579	56.7%
No						
Unknown	1,871	6.0%	146	7.4%	1,725	5.9%
May 2020	1,032	3.3%	61	3.1%	971	3.3%
June 2020	1,186	3.8%	56	2.8%	1,130	3.9%
July 2020	2,874	9.2%	187	9.4%	2,687	9.2%
August 2020	1,770	5.7%	105	5.3%	1,665	5.7%
September 2020	1,224	3.9%	69	3.5%	1,155	3.9%
October 2020	2,046	6.6%	138	7.0%	1,908	6.5%
November 2020	4,347	13.9%	285	14.4%	4,062	13.9%
December 2020	5,473	17.5%	403	20.3%	5,070	17.3%
January 2021	4,981	15.9%	337	17.0%	4,644	15.9%
February 2021	2,389	7.6%	149	7.5%	2,240	7.7%
March 2021	2,043	6.5%	49	2.5%	1,994	6.8%
Census Bureau (CB) Region						
Midwest	4,894	15.7%	298	15.0%	4,596	15.7%
Northeast	4,273	13.7%	216	10.9%	4,057	13.9%
South	17,161	54.9%	1,166	58.7%	15,995	54.7%
West	4,801	15.4%	302	15.2%	4,499	15.4%
CB Region (Invalid)	17	0.1%	1	0.1%	16	0.1%
CB Region (Missing)	30	0.1%	1	0.1%	29	0.1%
CB Region (Other)	60	0.2%	1	0.1%	59	0.2%
Urbanicity						
Urban (population >= 50,000)	21,518	68.9%	1,238	62.4%	20,280	69.3%

**Table 1x. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Suburban (population 2,500 - 49,999)	357	1.1%	27	1.4%	330	1.1%
Rural (population < 2,500)	9,254	29.6%	717	36.1%	8,537	29.2%
Zip Code Unknown or Urbanicity Not Available	107	0.3%	3	0.2%	104	0.4%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	61,066.7	23,018.6	55,450.0	20,031.9	61,457.4	23,185.1
Average Median Home Value <sup>3</sup>	215,716.0	147,133.0	187,078.0	123,763.2	217,707.8	148,559.1
Average Percent Unemployment <sup>3</sup>	5.9	3.1	6.4	3.5	5.9	3.0
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	29,316	93.9%	1,907	96.1%	27,409	93.7%
Median Home Value Available	29,293	93.8%	1,905	96.0%	27,388	93.6%
Percent Unemployment Available	29,358	94.0%	1,911	96.3%	27,447	93.8%
All SES Indicators Available	29,267	93.7%	1,903	95.9%	27,364	93.5%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	269	0.9%	26	1.3%	243	0.8%
Adult BMI 20-29	2,146	6.9%	158	8.0%	1,988	6.8%
Adult BMI 30-39	4,984	16.0%	386	19.4%	4,598	15.7%
Adult BMI 40 or greater	4,446	14.2%	384	19.3%	4,062	13.9%
Alcohol or Drug Abuse	2,076	6.6%	182	9.2%	1,894	6.5%
Alcohol Use Abuse	1,170	3.7%	131	6.6%	1,039	3.6%
Any Cancer	2,273	7.3%	232	11.7%	2,041	7.0%
Asthma	4,021	12.9%	257	12.9%	3,764	12.9%
Autoimmune Conditions	1,753	5.6%	159	8.0%	1,594	5.4%
Blood Stem Cell Transplant	5	0.0%	1	0.1%	4	0.0%
Chronic Kidney Disease	6,512	20.8%	709	35.7%	5,803	19.8%

**Table 1x. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Congestive Heart Failure	4,391	14.1%	513	25.8%	3,878	13.3%
Chronic Obstructive Pulmonary Disease (COPD)	5,114	16.4%	530	26.7%	4,584	15.7%
Coronary Artery Disease	6,094	19.5%	627	31.6%	5,467	18.7%
Cystic Fibrosis	16	0.1%	2	0.1%	14	0.0%
Diabetes Mellitus	12,422	39.8%	1,110	55.9%	11,312	38.7%
Drug Abuse Dependence	1,201	3.8%	70	3.5%	1,131	3.9%
HIV	273	0.9%	22	1.1%	251	0.9%
Hypertension	17,947	57.5%	1,479	74.5%	16,468	56.3%
Interstitial Lung Disease	604	1.9%	88	4.4%	516	1.8%
Liver Disease	2,979	9.5%	294	14.8%	2,685	9.2%
Neurologic Conditions	4,108	13.2%	351	17.7%	3,757	12.8%
Obesity	12,086	38.7%	966	48.7%	11,120	38.0%
Pulmonary Conditions	7,365	23.6%	627	31.6%	6,738	23.0%
Sickle Cell Disease	185	0.6%	10	0.5%	175	0.6%
Smoking	6,351	20.3%	564	28.4%	5,787	19.8%
Solid Organ or Stem Cell Transplant	119	0.4%	13	0.7%	106	0.4%
Solid Organ Transplant	114	0.4%	12	0.6%	102	0.3%
Vascular Disease	19,722	63.1%	1,579	79.5%	18,143	62.0%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	973	3.1%	107	5.4%	866	3.0%
Glucocorticoids Inhaled	3,516	11.3%	288	14.5%	3,228	11.0%
Glucocorticoids NonSystemic	5,537	17.7%	446	22.5%	5,091	17.4%
Glucocorticoids Ophthalmic	379	1.2%	28	1.4%	351	1.2%
Glucocorticoids Systemic	13,085	41.9%	968	48.8%	12,117	41.4%

**Table 1x. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Topical	2,101	6.7%	170	8.6%	1,931	6.6%
Immune Modulators	2,011	6.4%	230	11.6%	1,781	6.1%
Immunosuppressants	1,340	4.3%	134	6.8%	1,206	4.1%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	2,537	8.1%	205	10.3%	2,332	8.0%
Angiotensin receptor blockers (ARBs)	2,274	7.3%	156	7.9%	2,118	7.2%
Vasopressors	440	1.4%	171	8.6%	269	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.1	2.9	3.5	3.7	2.0	2.8
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	8,020	25.7%	412	20.8%	7,608	26.0%
Diarrhea	3,176	10.2%	160	8.1%	3,016	10.3%
Dyspnea/Short of Breath	23,057	73.8%	1,687	85.0%	21,370	73.1%
Fever	7,778	24.9%	486	24.5%	7,292	24.9%
Headache	555	1.8%	21	1.1%	534	1.8%
Malaise or Fatigue	6,031	19.3%	375	18.9%	5,656	19.3%
Multisystem Inflammatory Syndrome	48	0.2%	2	0.1%	46	0.2%
Myalgia	744	2.4%	18	0.9%	726	2.5%
Nasal Congestion	195	0.6%	14	0.7%	181	0.6%
Nausea or Vomiting	3,594	11.5%	152	7.7%	3,442	11.8%
Smell or Taste Disturbance	367	1.2%	4	0.2%	363	1.2%
Sore Throat	361	1.2%	17	0.9%	344	1.2%

**Table 1x. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.1	17.9	17.9	23.4	12.7	17.4
Mean number of emergency room encounters	1.5	3.3	1.7	3.3	1.5	3.3
Mean number of inpatient hospital encounters	0.3	0.9	0.5	1.1	0.3	0.9
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.3	9.0	5.0	10.4	3.1	8.9
Mean number of filled prescriptions	20.6	20.9	27.8	23.9	20.1	20.6
Mean number of generics dispensed	8.7	6.6	11.3	7.1	8.6	6.5
Mean number of unique drug classes dispensed	8.1	5.9	10.3	6.3	7.9	5.8
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	31,236	100.0%	1,985	100.0%	29,251	100.0%

**Table 1x. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	128	0.4%	25	1.3%	103	0.4%
Intensive Care	15,915	51.0%	1,795	90.4%	14,120	48.3%
Mechanical Ventilation	4,967	15.9%	1,616	81.4%	3,351	11.5%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	968	3.1%	228	11.5%	740	2.5%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)



**Table 1y. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	31,236	N/A	2,005	N/A	29,231	N/A
<b>Demographic Characteristics</b>						
Age (years)	52.9	10.7	57.8	7.0	52.6	10.9
Age						
0-5 years	78	0.2%	1	0.0%	77	0.3%
6-11 years	43	0.1%	0	0.0%	43	0.1%
12-18 years	187	0.6%	1	0.0%	186	0.6%
19-29 years	1,268	4.1%	10	0.5%	1,258	4.3%
30-39 years	2,723	8.7%	47	2.3%	2,676	9.2%
40-49 years	5,002	16.0%	206	10.3%	4,796	16.4%
50-64 years	21,935	70.2%	1,740	86.8%	20,195	69.1%
65-74 years						
≥ 75 years	14,879	47.6%	810	40.4%	14,069	48.1%
Sex	16,357	52.4%	1,195	59.6%	15,162	51.9%
Female						
Male	163	0.5%	15	0.7%	148	0.5%
Race <sup>2</sup>	608	1.9%	31	1.5%	577	2.0%
American Indian or Alaska Native	5,452	17.5%	399	19.9%	5,053	17.3%
Asian	155	0.5%	15	0.7%	140	0.5%
Black or African American	13,359	42.8%	686	34.2%	12,673	43.4%
Native Hawaiian or Other Pacific Islander	11,499	36.8%	859	42.8%	10,640	36.4%
Unknown						
White	2,671	8.6%	159	7.9%	2,512	8.6%

**Table 1y. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	11,151	35.7%	1,003	50.0%	10,148	34.7%
Yes	17,414	55.7%	843	42.0%	16,571	56.7%
No						
Unknown	1,871	6.0%	147	7.3%	1,724	5.9%
May 2020	1,032	3.3%	62	3.1%	970	3.3%
June 2020	1,186	3.8%	56	2.8%	1,130	3.9%
July 2020	2,874	9.2%	187	9.3%	2,687	9.2%
August 2020	1,770	5.7%	106	5.3%	1,664	5.7%
September 2020	1,224	3.9%	71	3.5%	1,153	3.9%
October 2020	2,046	6.6%	139	6.9%	1,907	6.5%
November 2020	4,347	13.9%	292	14.6%	4,055	13.9%
December 2020	5,473	17.5%	407	20.3%	5,066	17.3%
January 2021	4,981	15.9%	340	17.0%	4,641	15.9%
February 2021	2,389	7.6%	149	7.4%	2,240	7.7%
March 2021	2,043	6.5%	49	2.4%	1,994	6.8%
Census Bureau (CB) Region						
Midwest	4,894	15.7%	301	15.0%	4,593	15.7%
Northeast	4,273	13.7%	220	11.0%	4,053	13.9%
South	17,161	54.9%	1,174	58.6%	15,987	54.7%
West	4,801	15.4%	307	15.3%	4,494	15.4%
CB Region (Invalid)	17	0.1%	1	0.0%	16	0.1%
CB Region (Missing)	30	0.1%	1	0.0%	29	0.1%
CB Region (Other)	60	0.2%	1	0.0%	59	0.2%
Urbanicity						

**Table 1y. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Urban (population >= 50,000)	21,518	68.9%	1,248	62.2%	20,270	69.3%
Suburban (population 2,500 - 49,999)	357	1.1%	27	1.3%	330	1.1%
Rural (population < 2,500)	9,254	29.6%	727	36.3%	8,527	29.2%
Zip Code Unknown or Urbanicity Not Available	107	0.3%	3	0.1%	104	0.4%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	61,066.7	23,018.6	55,511.6	20,032.1	61,457.4	23,187.4
Average Median Home Value <sup>3</sup>	215,716.0	147,133.0	187,789.1	124,981.6	217,680.2	148,506.7
Average Percent Unemployment <sup>3</sup>	5.9	3.1	6.4	3.5	5.9	3.0
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	29,316	93.9%	1,927	96.1%	27,389	93.7%
Median Home Value Available	29,293	93.8%	1,925	96.0%	27,368	93.6%
Percent Unemployment Available	29,358	94.0%	1,931	96.3%	27,427	93.8%
All SES Indicators Available	29,267	93.7%	1,923	95.9%	27,344	93.5%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	269	0.9%	27	1.3%	242	0.8%
Adult BMI 20-29	2,146	6.9%	160	8.0%	1,986	6.8%
Adult BMI 30-39	4,984	16.0%	389	19.4%	4,595	15.7%
Adult BMI 40 or greater	4,446	14.2%	386	19.3%	4,060	13.9%
Alcohol or Drug Abuse	2,076	6.6%	187	9.3%	1,889	6.5%
Alcohol Use Abuse	1,170	3.7%	133	6.6%	1,037	3.5%
Any Cancer	2,273	7.3%	234	11.7%	2,039	7.0%
Asthma	4,021	12.9%	259	12.9%	3,762	12.9%
Autoimmune Conditions	1,753	5.6%	159	7.9%	1,594	5.5%

**Table 1y. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Blood Stem Cell Transplant	5	0.0%	1	0.0%	4	0.0%
Chronic Kidney Disease	6,512	20.8%	716	35.7%	5,796	19.8%
Congestive Heart Failure	4,391	14.1%	521	26.0%	3,870	13.2%
Chronic Obstructive Pulmonary Disease (COPD)	5,114	16.4%	538	26.8%	4,576	15.7%
Coronary Artery Disease	6,094	19.5%	636	31.7%	5,458	18.7%
Cystic Fibrosis	16	0.1%	2	0.1%	14	0.0%
Diabetes Mellitus	12,422	39.8%	1,119	55.8%	11,303	38.7%
Drug Abuse Dependence	1,201	3.8%	73	3.6%	1,128	3.9%
HIV	273	0.9%	22	1.1%	251	0.9%
Hypertension	17,947	57.5%	1,494	74.5%	16,453	56.3%
Interstitial Lung Disease	604	1.9%	89	4.4%	515	1.8%
Liver Disease	2,979	9.5%	298	14.9%	2,681	9.2%
Neurologic Conditions	4,108	13.2%	356	17.8%	3,752	12.8%
Obesity	12,086	38.7%	971	48.4%	11,115	38.0%
Pulmonary Conditions	7,365	23.6%	634	31.6%	6,731	23.0%
Sickle Cell Disease	185	0.6%	10	0.5%	175	0.6%
Smoking	6,351	20.3%	573	28.6%	5,778	19.8%
Solid Organ or Stem Cell Transplant	119	0.4%	13	0.6%	106	0.4%
Solid Organ Transplant	114	0.4%	12	0.6%	102	0.3%
Vascular Disease	19,722	63.1%	1,596	79.6%	18,126	62.0%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	973	3.1%	108	5.4%	865	3.0%
Glucocorticoids Inhaled	3,516	11.3%	290	14.5%	3,226	11.0%
Glucocorticoids NonSystemic	5,537	17.7%	450	22.4%	5,087	17.4%

**Table 1y. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Ophthalmic	379	1.2%	28	1.4%	351	1.2%
Glucocorticoids Systemic	13,085	41.9%	975	48.6%	12,110	41.4%
Glucocorticoids Topical	2,101	6.7%	172	8.6%	1,929	6.6%
Immune Modulators	2,011	6.4%	234	11.7%	1,777	6.1%
Immunosuppressants	1,340	4.3%	136	6.8%	1,204	4.1%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	2,537	8.1%	206	10.3%	2,331	8.0%
Angiotensin receptor blockers (ARBs)	2,274	7.3%	157	7.8%	2,117	7.2%
Vasopressors	440	1.4%	171	8.5%	269	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.1	2.9	3.5	3.7	2.0	2.8
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	8,020	25.7%	420	20.9%	7,600	26.0%
Diarrhea	3,176	10.2%	160	8.0%	3,016	10.3%
Dyspnea/Short of Breath	23,057	73.8%	1,703	84.9%	21,354	73.1%
Fever	7,778	24.9%	489	24.4%	7,289	24.9%
Headache	555	1.8%	21	1.0%	534	1.8%
Malaise or Fatigue	6,031	19.3%	382	19.1%	5,649	19.3%
Multisystem Inflammatory Syndrome	48	0.2%	2	0.1%	46	0.2%
Myalgia	744	2.4%	18	0.9%	726	2.5%
Nasal Congestion	195	0.6%	14	0.7%	181	0.6%
Nausea or Vomiting	3,594	11.5%	155	7.7%	3,439	11.8%
Smell or Taste Disturbance	367	1.2%	4	0.2%	363	1.2%

**Table 1y. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Sore Throat	361	1.2%	17	0.8%	344	1.2%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.1	17.9	17.8	23.3	12.7	17.4
Mean number of emergency room encounters	1.5	3.3	1.8	3.3	1.5	3.3
Mean number of inpatient hospital encounters	0.3	0.9	0.5	1.2	0.3	0.9
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.3	9.0	5.1	10.5	3.1	8.9
Mean number of filled prescriptions	20.6	20.9	27.8	24.1	20.1	20.6
Mean number of generics dispensed	8.7	6.6	11.3	7.1	8.6	6.5
Mean number of unique drug classes dispensed	8.1	5.9	10.3	6.3	7.9	5.8
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	31,236	100.0%	2,005	100.0%	29,231	100.0%

**Table 1y. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	128	0.4%	25	1.2%	103	0.4%
Intensive Care	15,915	51.0%	1,805	90.0%	14,110	48.3%
Mechanical Ventilation	4,967	15.9%	1,621	80.8%	3,346	11.4%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	968	3.1%	230	11.5%	738	2.5%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1z. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
Patient Characteristics	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	487,040	N/A	370,526	N/A	3,838	N/A	111,285	N/A	1,391	N/A
<b>Demographic Characteristics</b>										
Age (years)	40.4	15.6	39.5	15.6	43.4	15.7	43.1	15.5	38.7	16.3
Age										
0-5 years	8,231	1.7%	6,765	1.8%	60	1.6%	1,366	1.2%	40	2.9%
6-11 years	12,438	2.6%	10,116	2.7%	75	2.0%	2,196	2.0%	51	3.7%
12-18 years	31,580	6.5%	24,731	6.7%	195	5.1%	6,546	5.9%	108	7.8%
19-29 years	89,419	18.4%	71,508	19.3%	594	15.5%	17,080	15.3%	237	17.0%
30-39 years	86,781	17.8%	69,550	18.8%	562	14.6%	16,433	14.8%	236	17.0%
40-49 years	90,333	18.5%	69,081	18.6%	661	17.2%	20,303	18.2%	288	20.7%
50-64 years	168,258	34.5%	118,775	32.1%	1,691	44.1%	47,361	42.6%	431	31.0%
65-74 years										
≥ 75 years	260,250	53.4%	198,007	53.4%	2,099	54.7%	59,421	53.4%	723	52.0%
Sex	226,790	46.6%	172,519	46.6%	1,739	45.3%	51,864	46.6%	668	48.0%
Female										
Male	1,740	0.4%	1,236	0.3%	11	0.3%	490	0.4%	3	0.2%
Race <sup>2</sup>										
American Indian or Alaska Native	32,199	6.6%	25,413	6.9%	366	9.5%	6,386	5.7%	34	2.4%
Asian	1,195	0.2%	939	0.3%	8	0.2%	196	0.2%	52	3.7%
Black or African American	286,937	58.9%	223,723	60.4%	2,018	52.6%	60,259	54.1%	937	67.4%
Native Hawaiian or Other Pacific Islander	152,609	31.3%	107,715	29.1%	1,414	36.8%	43,200	38.8%	280	20.1%
Unknown										



**Table 1z. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
White	41,985	8.6%	36,448	9.8%	156	4.1%	5,318	4.8%	63	4.5%
Hispanic origin	60,060	12.3%	36,523	9.9%	755	19.7%	22,714	20.4%	68	4.9%
Yes	384,995	79.0%	297,555	80.3%	2,927	76.3%	83,253	74.8%	1,260	90.6%
No										
Unknown	14,509	3.0%	12,693	3.4%	122	3.2%	1,653	1.5%	41	2.9%
May 2020	12,567	2.6%	10,776	2.9%	76	2.0%	1,654	1.5%	61	4.4%
June 2020	21,283	4.4%	17,635	4.8%	121	3.2%	3,451	3.1%	76	5.5%
July 2020	39,597	8.1%	31,501	8.5%	320	8.3%	7,653	6.9%	123	8.8%
August 2020	24,737	5.1%	18,922	5.1%	204	5.3%	5,478	4.9%	133	9.6%
September 2020	22,635	4.6%	17,075	4.6%	172	4.5%	5,298	4.8%	90	6.5%
October 2020	36,666	7.5%	27,122	7.3%	265	6.9%	9,097	8.2%	182	13.1%
November 2020	75,617	15.5%	55,698	15.0%	634	16.5%	19,111	17.2%	174	12.5%
December 2020	95,338	19.6%	69,452	18.7%	844	22.0%	24,842	22.3%	200	14.4%
January 2021	78,532	16.1%	58,508	15.8%	685	17.8%	19,192	17.2%	147	10.6%
February 2021	34,152	7.0%	26,054	7.0%	214	5.6%	7,801	7.0%	83	6.0%
March 2021	31,407	6.4%	25,090	6.8%	181	4.7%	6,055	5.4%	81	5.8%
Census Bureau (CB) Region										
Midwest	65,563	13.5%	44,406	12.0%	470	12.2%	20,687	18.6%	0	0.0%
Northeast	107,396	22.1%	96,946	26.2%	589	15.3%	9,861	8.9%	0	0.0%
South	215,688	44.3%	148,169	40.0%	2,514	65.5%	65,005	58.4%	0	0.0%
West	96,999	19.9%	80,999	21.9%	265	6.9%	15,732	14.1%	3	0.2%
CB Region (Invalid)	335	0.1%	0	0.0%	0	0.0%	0	0.0%	335	24.1%
CB Region (Missing)	608	0.1%	0	0.0%	0	0.0%	0	0.0%	608	43.7%
CB Region (Other)	451	0.1%	6	0.0%	0	0.0%	0	0.0%	445	32.0%

**Table 1z. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Urbanicity										
Urban (population >= 50,000)	370,526	76.1%	370,526	100.0%	0	0.0%	0	0.0%	0	0.0%
Suburban (population 2,500 - 49,999)	3,838	0.8%	0	0.0%	3,838	100.0%	0	0.0%	0	0.0%
Rural (population < 2,500)	111,285	22.8%	0	0.0%	0	0.0%	111,285	100.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	1,391	0.3%	0	0.0%	0	0.0%	0	0.0%	1,391	100.0%
Proxies for Socioeconomic Status (SES)										
Average Median Household Income <sup>3</sup>	73,217.1	29,065.0	76,914.1	30,486.9	55,922.7	19,495.8	62,639.2	21,941.3	69,844.7	11,932.5
Average Median Home Value	297,606.4	229,648.6	335,182.5	248,757.6	186,512.6	132,182.3	188,023.2	110,204.0	383,866.7	190,298.0
Average Percent Unemployment <sup>3</sup>	5.1	2.5	5.1	2.3	6.1	2.7	5.2	3.0	5.8	2.2
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	431,454	88.6%	321,321	86.7%	3,483	90.8%	106,647	95.8%	3	0.2%
Median Home Value Available	431,339	88.6%	321,185	86.7%	3,476	90.6%	106,675	95.9%	3	0.2%
Percent Unemployment Available	431,951	88.7%	321,422	86.7%	3,497	91.1%	107,029	96.2%	3	0.2%
All SES Indicators Available	431,049	88.5%	321,162	86.7%	3,472	90.5%	106,412	95.6%	3	0.2%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	1,780	0.4%	1,301	0.4%	19	0.5%	457	0.4%	3	0.2%

**Table 1z. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 20-29	26,611	5.5%	20,168	5.4%	209	5.4%	6,204	5.6%	30	2.2%
Adult BMI 30-39	34,971	7.2%	24,166	6.5%	399	10.4%	10,385	9.3%	21	1.5%
Adult BMI 40 or greater	19,641	4.0%	12,517	3.4%	280	7.3%	6,836	6.1%	8	0.6%
Alcohol or Drug Abuse	10,405	2.1%	7,341	2.0%	130	3.4%	2,922	2.6%	12	0.9%
Alcohol Use Abuse	6,114	1.3%	4,470	1.2%	70	1.8%	1,567	1.4%	7	0.5%
Any Cancer	12,372	2.5%	8,786	2.4%	138	3.6%	3,412	3.1%	36	2.6%
Asthma	27,780	5.7%	20,535	5.5%	262	6.8%	6,929	6.2%	54	3.9%
Autoimmune Conditions	9,411	1.9%	6,197	1.7%	127	3.3%	3,071	2.8%	16	1.2%
Blood Stem Cell Transplant	36	0.0%	28	0.0%	1	0.0%	6	0.0%	1	0.1%
Chronic Kidney Disease	20,546	4.2%	13,753	3.7%	257	6.7%	6,487	5.8%	49	3.5%
Congestive Heart Failure	10,875	2.2%	6,616	1.8%	138	3.6%	4,099	3.7%	22	1.6%
Chronic Obstructive Pulmonary Disease (COPD)	17,756	3.6%	10,362	2.8%	251	6.5%	7,129	6.4%	14	1.0%
Coronary Artery Disease	22,122	4.5%	14,049	3.8%	284	7.4%	7,743	7.0%	46	3.3%
Cystic Fibrosis	91	0.0%	72	0.0%	1	0.0%	17	0.0%	1	0.1%
Diabetes Mellitus	55,624	11.4%	37,235	10.0%	615	16.0%	17,636	15.8%	138	9.9%
Drug Abuse Dependence	5,538	1.1%	3,798	1.0%	82	2.1%	1,652	1.5%	6	0.4%
HIV	1,942	0.4%	1,709	0.5%	12	0.3%	218	0.2%	3	0.2%
Hypertension	101,897	20.9%	67,826	18.3%	1,194	31.1%	32,649	29.3%	228	16.4%
Interstitial Lung Disease	1,644	0.3%	1,048	0.3%	21	0.5%	572	0.5%	3	0.2%
Liver Disease	14,742	3.0%	10,379	2.8%	154	4.0%	4,178	3.8%	31	2.2%
Neurologic Conditions	20,488	4.2%	13,336	3.6%	245	6.4%	6,874	6.2%	33	2.4%
Obesity	74,270	15.2%	51,015	13.8%	844	22.0%	22,326	20.1%	85	6.1%
Pulmonary Conditions	12,039	2.5%	8,210	2.2%	136	3.5%	3,667	3.3%	26	1.9%

**Table 1z. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
<b>Patient Characteristics</b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>
Sickle Cell Disease	566	0.1%	462	0.1%	6	0.2%	96	0.1%	2	0.1%
Smoking	30,870	6.3%	19,254	5.2%	427	11.1%	11,142	10.0%	47	3.4%
Solid Organ or Stem Cell	355	0.1%	266	0.1%	4	0.1%	84	0.1%	1	0.1%
Solid Organ Transplant	319	0.1%	238	0.1%	3	0.1%	78	0.1%	0	0.0%
Vascular Disease	118,527	24.3%	80,352	21.7%	1,324	34.5%	36,584	32.9%	267	19.2%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	4,208	0.9%	2,793	0.8%	60	1.6%	1,343	1.2%	12	0.9%
Glucocorticoids Inhaled	18,934	3.9%	13,319	3.6%	173	4.5%	5,414	4.9%	28	2.0%
Glucocorticoids NonSystemic	41,661	8.6%	30,562	8.2%	357	9.3%	10,652	9.6%	90	6.5%
Glucocorticoids Ophthalmic	2,732	0.6%	1,956	0.5%	31	0.8%	735	0.7%	10	0.7%
Glucocorticoids Systemic	88,658	18.2%	60,657	16.4%	928	24.2%	26,937	24.2%	136	9.8%
Glucocorticoids Topical	22,157	4.5%	16,772	4.5%	174	4.5%	5,152	4.6%	59	4.2%
Immune Modulators	9,270	1.9%	6,404	1.7%	100	2.6%	2,746	2.5%	20	1.4%
Immunosuppressants	6,598	1.4%	4,359	1.2%	83	2.2%	2,144	1.9%	12	0.9%
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	18,495	3.8%	12,029	3.2%	228	5.9%	6,201	5.6%	37	2.7%
Angiotensin receptor blockers (ARBs)	16,089	3.3%	11,285	3.0%	148	3.9%	4,621	4.2%	35	2.5%
Vasopressors	570	0.1%	378	0.1%	8	0.2%	184	0.2%	0	0.0%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.4	0.4	1.3	0.7	1.8	0.6	1.7	0.3	1.1

**Table 1z. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	85,966	17.7%	61,644	16.6%	794	20.7%	23,349	21.0%	179	12.9%
Diarrhea	12,058	2.5%	8,334	2.2%	125	3.3%	3,558	3.2%	41	2.9%
Dyspnea/Short of Breath	57,288	11.8%	39,849	10.8%	599	15.6%	16,704	15.0%	136	9.8%
Fever	49,696	10.2%	35,809	9.7%	448	11.7%	13,276	11.9%	163	11.7%
Headache	6,581	1.4%	5,006	1.4%	65	1.7%	1,482	1.3%	28	2.0%
Malaise or Fatigue	34,806	7.1%	25,628	6.9%	292	7.6%	8,816	7.9%	70	5.0%
Multisystem Inflammatory Syndrome	54	0.0%	40	0.0%	1	0.0%	13	0.0%	0	0.0%
Myalgia	13,762	2.8%	10,267	2.8%	98	2.6%	3,360	3.0%	37	2.7%
Nasal Congestion	14,334	2.9%	10,004	2.7%	118	3.1%	4,180	3.8%	32	2.3%
Nausea or Vomiting	15,635	3.2%	10,440	2.8%	174	4.5%	4,984	4.5%	37	2.7%
Smell or Taste Disturbance	12,808	2.6%	8,959	2.4%	125	3.3%	3,685	3.3%	39	2.8%
Sore Throat	22,063	4.5%	16,236	4.4%	172	4.5%	5,590	5.0%	65	4.7%
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory encounters	6.3	9.5	6.1	9.4	7.4	10.1	6.9	10.1	6.3	10.2
Mean number of emergency room encounters	0.3	1.3	0.3	1.2	0.5	1.6	0.4	1.6	0.2	1.5
Mean number of inpatient hospital encounters	0.1	0.3	0.0	0.3	0.1	0.4	0.1	0.4	0.1	1.3
Mean number of non-acute institutional encounters	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.0
Mean number of other ambulatory encounters	0.9	4.1	0.8	3.9	1.1	4.3	1.0	4.7	0.4	2.5

**Table 1z. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
<b>Patient Characteristics</b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>	<b>Number/ Mean</b>	<b>Percent/ Standard Deviation<sup>1</sup></b>
Mean number of filled prescriptions	8.2	12.8	7.2	11.6	12.1	16.4	11.5	15.8	4.9	8.9
Mean number of generics dispensed	3.6	4.5	3.3	4.1	5.0	5.5	4.8	5.3	2.1	3.3
Mean number of unique drug classes dispensed	3.4	4.1	3.1	3.8	4.7	4.9	4.5	4.8	2.0	3.1
<b>COVID Diagnosis (-7, 7)</b>										
Diagnosis Code for COVID-19	383,876	78.8%	287,476	77.6%	3,184	83.0%	91,939	82.6%	1,277	91.8%
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	60	0.0%	52	0.0%	0	0.0%	7	0.0%	1	0.1%
Intensive Care	9,277	1.9%	6,588	1.8%	118	3.1%	2,539	2.3%	32	2.3%
Mechanical Ventilation	3,092	0.6%	2,086	0.6%	38	1.0%	954	0.9%	14	1.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	663	0.1%	467	0.1%	3	0.1%	190	0.2%	3	0.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1aa. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	31,236	N/A	21,518	N/A	357	N/A	9,254	N/A	107	N/A
<b>Demographic Characteristics</b>										
Age (years)	52.9	10.7	52.2	11.1	53.2	11.5	54.7	9.7	51.8	10.1
Age										
0-5 years	78	0.2%	60	0.3%	2	0.6%	16	0.2%	0	0.0%
6-11 years	43	0.1%	31	0.1%	1	0.3%	11	0.1%	0	0.0%
12-18 years	187	0.6%	145	0.7%	3	0.8%	37	0.4%	2	1.9%
19-29 years	1,268	4.1%	989	4.6%	15	4.2%	264	2.9%	0	0.0%
30-39 years	2,723	8.7%	2,145	10.0%	26	7.3%	542	5.9%	10	9.3%
40-49 years	5,002	16.0%	3,656	17.0%	54	15.1%	1,267	13.7%	25	23.4%
50-64 years	21,935	70.2%	14,492	67.3%	256	71.7%	7,117	76.9%	70	65.4%
65-74 years										
≥ 75 years	14,879	47.6%	10,207	47.4%	182	51.0%	4,442	48.0%	48	44.9%
Sex	16,357	52.4%	11,311	52.6%	175	49.0%	4,812	52.0%	59	55.1%
Female										
Male	163	0.5%	98	0.5%	2	0.6%	63	0.7%	0	0.0%
Race <sup>2</sup>	608	1.9%	563	2.6%	2	0.6%	39	0.4%	4	3.7%
American Indian or Alaska Native	5,452	17.5%	3,949	18.4%	74	20.7%	1,425	15.4%	4	3.7%
Asian	155	0.5%	121	0.6%	2	0.6%	21	0.2%	11	10.3%
Black or African American	13,359	42.8%	10,200	47.4%	120	33.6%	2,968	32.1%	71	66.4%
Native Hawaiian or Other Pacific Islander	11,499	36.8%	6,587	30.6%	157	44.0%	4,738	51.2%	17	15.9%
Unknown										
White	2,671	8.6%	2,283	10.6%	15	4.2%	369	4.0%	4	3.7%

**Table 1aa. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	11,151	35.7%	6,272	29.1%	152	42.6%	4,720	51.0%	7	6.5%
Yes	17,414	55.7%	12,963	60.2%	190	53.2%	4,165	45.0%	96	89.7%
No										
Unknown	1,871	6.0%	1,600	7.4%	22	6.2%	244	2.6%	5	4.7%
May 2020	1,032	3.3%	831	3.9%	10	2.8%	189	2.0%	2	1.9%
June 2020	1,186	3.8%	930	4.3%	11	3.1%	244	2.6%	1	0.9%
July 2020	2,874	9.2%	2,105	9.8%	34	9.5%	728	7.9%	7	6.5%
August 2020	1,770	5.7%	1,174	5.5%	25	7.0%	555	6.0%	16	15.0%
September 2020	1,224	3.9%	742	3.4%	10	2.8%	462	5.0%	10	9.3%
October 2020	2,046	6.6%	1,262	5.9%	36	10.1%	722	7.8%	26	24.3%
November 2020	4,347	13.9%	2,916	13.6%	49	13.7%	1,368	14.8%	14	13.1%
December 2020	5,473	17.5%	3,555	16.5%	69	19.3%	1,836	19.8%	13	12.1%
January 2021	4,981	15.9%	3,299	15.3%	50	14.0%	1,626	17.6%	6	5.6%
February 2021	2,389	7.6%	1,611	7.5%	27	7.6%	747	8.1%	4	3.7%
March 2021	2,043	6.5%	1,493	6.9%	14	3.9%	533	5.8%	3	2.8%
Census Bureau (CB) Region										
Midwest	4,894	15.7%	3,219	15.0%	42	11.8%	1,633	17.6%	0	0.0%
Northeast	4,273	13.7%	3,775	17.5%	35	9.8%	463	5.0%	0	0.0%
South	17,161	54.9%	10,624	49.4%	262	73.4%	6,275	67.8%	0	0.0%
West	4,801	15.4%	3,900	18.1%	18	5.0%	883	9.5%	0	0.0%
CB Region (Invalid)	17	0.1%	0	0.0%	0	0.0%	0	0.0%	17	15.9%
CB Region (Missing)	30	0.1%	0	0.0%	0	0.0%	0	0.0%	30	28.0%
CB Region (Other)	60	0.2%	0	0.0%	0	0.0%	0	0.0%	60	56.1%
Urbanicity										



**Table 1aa. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Urban (population >= 50,000)	21,518	68.9%	21,518	100.0%	0	0.0%	0	0.0%	0	0.0%
Suburban (population 2,500 - 49,999)	357	1.1%	0	0.0%	357	100.0%	0	0.0%	0	0.0%
Rural (population < 2,500)	9,254	29.6%	0	0.0%	0	0.0%	9,254	100.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	107	0.3%	0	0.0%	0	0.0%	0	0.0%	107	100.0%
Proxies for Socioeconomic Status (SES)										
Average Median Household Income <sup>3</sup>	61,066.7	23,018.6	64,098.5	24,854.4	51,003.1	17,638.6	54,803.9	17,576.2	.	.
Average Median Home Value <sup>3</sup>	215,716.0	147,133.0	244,834.9	164,357.4	156,519.5	97,820.0	154,184.2	78,510.8	.	.
Average Percent Unemployment <sup>3</sup>	5.9	3.1	6.0	2.9	6.4	2.5	5.8	3.4	.	.
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	29,316	93.9%	19,888	92.4%	339	95.0%	9,089	98.2%	0	0.0%
Median Home Value Available	29,293	93.8%	19,873	92.4%	338	94.7%	9,082	98.1%	0	0.0%
Percent Unemployment Available	29,358	94.0%	19,895	92.5%	339	95.0%	9,124	98.6%	0	0.0%
All SES Indicators Available	29,267	93.7%	19,871	92.3%	338	94.7%	9,058	97.9%	0	0.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	269	0.9%	179	0.8%	3	0.8%	87	0.9%	0	0.0%
Adult BMI 20-29	2,146	6.9%	1,454	6.8%	22	6.2%	665	7.2%	5	4.7%
Adult BMI 30-39	4,984	16.0%	3,280	15.2%	60	16.8%	1,641	17.7%	3	2.8%
Adult BMI 40 or greater	4,446	14.2%	2,804	13.0%	64	17.9%	1,577	17.0%	1	0.9%
Alcohol or Drug Abuse	2,076	6.6%	1,387	6.4%	34	9.5%	653	7.1%	2	1.9%
Alcohol Use Abuse	1,170	3.7%	811	3.8%	18	5.0%	341	3.7%	0	0.0%
Any Cancer	2,273	7.3%	1,499	7.0%	24	6.7%	745	8.1%	5	4.7%
Asthma	4,021	12.9%	2,749	12.8%	40	11.2%	1,228	13.3%	4	3.7%
Autoimmune Conditions	1,753	5.6%	1,101	5.1%	35	9.8%	616	6.7%	1	0.9%

**Table 1aa. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Blood Stem Cell Transplant	5	0.0%	3	0.0%	0	0.0%	2	0.0%	0	0.0%
Chronic Kidney Disease	6,512	20.8%	4,256	19.8%	93	26.1%	2,139	23.1%	24	22.4%
Congestive Heart Failure	4,391	14.1%	2,688	12.5%	54	15.1%	1,641	17.7%	8	7.5%
Chronic Obstructive Pulmonary Disease (COPD)	5,114	16.4%	2,985	13.9%	72	20.2%	2,052	22.2%	5	4.7%
Coronary Artery Disease	6,094	19.5%	3,826	17.8%	87	24.4%	2,167	23.4%	14	13.1%
Cystic Fibrosis	16	0.1%	11	0.1%	0	0.0%	4	0.0%	1	0.9%
Diabetes Mellitus	12,422	39.8%	8,006	37.2%	161	45.1%	4,220	45.6%	35	32.7%
Drug Abuse Dependence	1,201	3.8%	800	3.7%	20	5.6%	379	4.1%	2	1.9%
HIV	273	0.9%	237	1.1%	2	0.6%	34	0.4%	0	0.0%
Hypertension	17,947	57.5%	11,534	53.6%	225	63.0%	6,140	66.3%	48	44.9%
Interstitial Lung Disease	604	1.9%	380	1.8%	6	1.7%	217	2.3%	1	0.9%
Liver Disease	2,979	9.5%	1,971	9.2%	41	11.5%	957	10.3%	10	9.3%
Neurologic Conditions	4,108	13.2%	2,615	12.2%	48	13.4%	1,440	15.6%	5	4.7%
Obesity	12,086	38.7%	7,897	36.7%	152	42.6%	4,018	43.4%	19	17.8%
Pulmonary Conditions	7,365	23.6%	4,909	22.8%	85	23.8%	2,344	25.3%	27	25.2%
Sickle Cell Disease	185	0.6%	144	0.7%	3	0.8%	38	0.4%	0	0.0%
Smoking	6,351	20.3%	3,836	17.8%	101	28.3%	2,402	26.0%	12	11.2%
Solid Organ or Stem Cell Transplant	119	0.4%	86	0.4%	2	0.6%	31	0.3%	0	0.0%
Solid Organ Transplant	114	0.4%	83	0.4%	2	0.6%	29	0.3%	0	0.0%
Vascular Disease	19,722	63.1%	12,759	59.3%	248	69.5%	6,661	72.0%	54	50.5%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	973	3.1%	632	2.9%	12	3.4%	328	3.5%	1	0.9%
Glucocorticoids Inhaled	3,516	11.3%	2,257	10.5%	47	13.2%	1,208	13.1%	4	3.7%

**Table 1aa. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids NonSystemic	5,537	17.7%	3,620	16.8%	72	20.2%	1,831	19.8%	14	13.1%
Glucocorticoids Ophthalmic	379	1.2%	246	1.1%	8	2.2%	122	1.3%	3	2.8%
Glucocorticoids Systemic	13,085	41.9%	8,303	38.6%	171	47.9%	4,593	49.6%	18	16.8%
Glucocorticoids Topical	2,101	6.7%	1,417	6.6%	23	6.4%	653	7.1%	8	7.5%
Immune Modulators	2,011	6.4%	1,370	6.4%	24	6.7%	614	6.6%	3	2.8%
Immunosuppressants	1,340	4.3%	878	4.1%	22	6.2%	440	4.8%	0	0.0%
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	2,537	8.1%	1,580	7.3%	36	10.1%	914	9.9%	7	6.5%
Angiotensin receptor blockers (ARBs)	2,274	7.3%	1,487	6.9%	31	8.7%	753	8.1%	3	2.8%
Vasopressors	440	1.4%	293	1.4%	7	2.0%	140	1.5%	0	0.0%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.1	2.9	2.0	2.9	2.3	2.9	2.4	3.0	1.3	2.2
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	8,020	25.7%	5,695	26.5%	87	24.4%	2,221	24.0%	17	15.9%
Diarrhea	3,176	10.2%	2,211	10.3%	32	9.0%	922	10.0%	11	10.3%
Dyspnea/Short of Breath	23,057	73.8%	15,743	73.2%	266	74.5%	6,984	75.5%	64	59.8%
Fever	7,778	24.9%	5,625	26.1%	83	23.2%	2,044	22.1%	26	24.3%
Headache	555	1.8%	399	1.9%	8	2.2%	146	1.6%	2	1.9%
Malaise or Fatigue	6,031	19.3%	3,980	18.5%	78	21.8%	1,959	21.2%	14	13.1%
Multisystem Inflammatory Syndrome	48	0.2%	36	0.2%	1	0.3%	11	0.1%	0	0.0%
Myalgia	744	2.4%	527	2.4%	6	1.7%	211	2.3%	0	0.0%
Nasal Congestion	195	0.6%	137	0.6%	1	0.3%	57	0.6%	0	0.0%

**Table 1aa. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Nausea or Vomiting	3,594	11.5%	2,400	11.2%	39	10.9%	1,146	12.4%	9	8.4%
Smell or Taste Disturbance	367	1.2%	261	1.2%	8	2.2%	97	1.0%	1	0.9%
Sore Throat	361	1.2%	256	1.2%	6	1.7%	98	1.1%	1	0.9%
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory encounters	13.1	17.9	12.6	17.6	13.7	15.7	14.1	18.6	14.9	24.2
Mean number of emergency room encounters	1.5	3.3	1.4	3.2	1.6	2.6	1.7	3.5	0.8	2.4
Mean number of inpatient hospital encounters	0.3	0.9	0.3	0.8	0.3	0.8	0.3	0.9	0.7	4.7
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.4	0.1	0.4	0.1	0.4	0.0	0.1
Mean number of other ambulatory encounters	3.3	9.0	3.1	8.7	3.4	7.6	3.8	9.8	1.0	5.3
Mean number of filled prescriptions	20.6	20.9	18.4	19.9	24.1	20.8	25.6	22.8	11.2	13.0
Mean number of generics dispensed	8.7	6.6	8.0	6.4	10.2	7.2	10.5	6.9	4.5	4.9
Mean number of unique drug classes dispensed	8.1	5.9	7.3	5.7	9.3	6.4	9.7	6.2	4.2	4.5
<b>COVID Diagnosis (-7, 7)</b>										
Diagnosis Code for COVID-19	31,236	100.0%	21,518	100.0%	357	100.0%	9,254	100.0%	107	100.0%

**Table 1aa. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	128	0.4%	111	0.5%	1	0.3%	15	0.2%	1	0.9%
Intensive Care	15,915	51.0%	11,216	52.1%	197	55.2%	4,447	48.1%	55	51.4%
Mechanical Ventilation	4,967	15.9%	3,256	15.1%	67	18.8%	1,623	17.5%	21	19.6%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	968	3.1%	666	3.1%	10	2.8%	288	3.1%	4	3.7%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	431,049	N/A	10,337	N/A	29,781	N/A
<b>Demographic Characteristics</b>						
Age (years)	40.7	15.5	39.4	12.8	48.4	11.2
Age						
0-5 years	6,786	1.6%	108	1.0%	78	0.3%
6-11 years	10,352	2.4%	119	1.2%	138	0.5%
12-18 years	26,823	6.2%	286	2.8%	402	1.3%
19-29 years	77,963	18.1%	2,120	20.5%	2,689	9.0%
30-39 years	77,074	17.9%	2,883	27.9%	4,676	15.7%
40-49 years	80,476	18.7%	2,284	22.1%	5,615	18.9%
50-64 years	151,575	35.2%	2,537	24.5%	16,183	54.3%
65-74 years						
≥ 75 years	230,341	53.4%	5,327	51.5%	18,234	61.2%
Sex	200,708	46.6%	5,010	48.5%	11,547	38.8%
Female						
Male	1,647	0.4%	0	0.0%	0	0.0%
Race <sup>2</sup>	10,337	2.4%	10,337	100.0%	0	0.0%
American Indian or Alaska Native	29,781	6.9%	0	0.0%	29,781	100.0%
Asian	1,050	0.2%	0	0.0%	0	0.0%
Black or African American	252,757	58.6%	0	0.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	135,477	31.4%	0	0.0%	0	0.0%
Unknown						
White	37,821	8.8%	1,333	12.9%	761	2.6%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) Among Those Less Than 65 Years of Age, with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>
1,647	N/A	1,050	N/A	135,477	N/A	252,757	N/A	178,292	N/A
<b>Demographic Characteristics</b>									
44.4	13.1	47.2	11.1	45.0	13.3	37.5	16.0	45.2	13.0
7	0.4%	3	0.3%	800	0.6%	5,790	2.3%	996	0.6%
12	0.7%	5	0.5%	1,331	1.0%	8,747	3.5%	1,605	0.9%
56	3.4%	18	1.7%	4,629	3.4%	21,432	8.5%	5,391	3.0%
240	14.6%	132	12.6%	19,691	14.5%	53,091	21.0%	24,872	14.0%
285	17.3%	153	14.6%	22,419	16.5%	46,658	18.5%	30,416	17.1%
365	22.2%	217	20.7%	24,747	18.3%	47,248	18.7%	33,228	18.6%
682	41.4%	522	49.7%	61,860	45.7%	69,791	27.6%	81,784	45.9%
930	56.5%	511	48.7%	72,380	53.4%	132,959	52.6%	97,382	54.6%
717	43.5%	539	51.3%	63,097	46.6%	119,798	47.4%	80,910	45.4%
1,647	100.0%	0	0.0%	0	0.0%	0	0.0%	1,647	0.9%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	10,337	5.8%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	29,781	16.7%
0	0.0%	1,050	100.0%	0	0.0%	0	0.0%	1,050	0.6%
0	0.0%	0	0.0%	0	0.0%	252,757	100.0%	0	0.0%
0	0.0%	0	0.0%	135,477	100.0%	0	0.0%	135,477	76.0%
594	36.1%	126	12.0%	4,389	3.2%	30,618	12.1%	7,203	4.0%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	59,385	13.8%	1,165	11.3%	14,104	47.4%
Yes	333,843	77.4%	7,839	75.8%	14,916	50.1%
No						
Unknown	10,761	2.5%	392	3.8%	1,486	5.0%
May 2020	9,901	2.3%	296	2.9%	1,006	3.4%
June 2020	19,500	4.5%	467	4.5%	1,506	5.1%
July 2020	36,946	8.6%	800	7.7%	3,399	11.4%
August 2020	21,871	5.1%	491	4.7%	1,871	6.3%
September 2020	20,046	4.7%	418	4.0%	1,244	4.2%
October 2020	32,783	7.6%	648	6.3%	1,768	5.9%
November 2020	67,533	15.7%	1,619	15.7%	3,490	11.7%
December 2020	85,652	19.9%	2,083	20.2%	5,164	17.3%
January 2021	70,305	16.3%	1,718	16.6%	4,914	16.5%
February 2021	29,939	6.9%	751	7.3%	2,176	7.3%
March 2021	25,812	6.0%	654	6.3%	1,757	5.9%
Census Bureau (CB) Region						
Midwest	65,461	15.2%	789	7.6%	3,195	10.7%
Northeast	53,661	12.4%	1,800	17.4%	3,148	10.6%
South	215,038	49.9%	3,320	32.1%	20,583	69.1%
West	96,889	22.5%	4,428	42.8%	2,855	9.6%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						



**Table 1ab. Aggregated Characteristics of COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) Among Those Less Than 65 Years of Age, with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>
473	28.7%	505	48.1%	42,323	31.2%	815	0.3%	58,570	32.9%
580	35.2%	419	39.9%	88,765	65.5%	221,324	87.6%	112,519	63.1%
43	2.6%	33	3.1%	2,721	2.0%	6,086	2.4%	4,675	2.6%
31	1.9%	29	2.8%	2,793	2.1%	5,746	2.3%	4,155	2.3%
75	4.6%	41	3.9%	4,759	3.5%	12,652	5.0%	6,848	3.8%
155	9.4%	100	9.5%	9,205	6.8%	23,287	9.2%	13,659	7.7%
83	5.0%	52	5.0%	6,231	4.6%	13,143	5.2%	8,728	4.9%
83	5.0%	41	3.9%	6,462	4.8%	11,798	4.7%	8,248	4.6%
134	8.1%	75	7.1%	10,979	8.1%	19,179	7.6%	13,604	7.6%
284	17.2%	175	16.7%	23,278	17.2%	38,687	15.3%	28,846	16.2%
334	20.3%	183	17.4%	27,609	20.4%	50,279	19.9%	35,373	19.8%
258	15.7%	186	17.7%	22,527	16.6%	40,702	16.1%	29,603	16.6%
88	5.3%	84	8.0%	9,889	7.3%	16,951	6.7%	12,988	7.3%
79	4.8%	51	4.9%	9,024	6.7%	14,247	5.6%	11,565	6.5%
133	8.1%	109	10.4%	23,963	17.7%	37,272	14.7%	28,189	15.8%
74	4.5%	84	8.0%	17,411	12.9%	31,144	12.3%	22,517	12.6%
694	42.1%	382	36.4%	59,620	44.0%	130,439	51.6%	84,599	47.4%
746	45.3%	475	45.2%	34,483	25.5%	53,902	21.3%	42,987	24.1%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Urban (population >= 50,000)	321,162	74.5%	9,625	93.1%	23,142	77.7%
Suburban (population 2,500 - 49,999)	3,472	0.8%	16	0.2%	357	1.2%
Rural (population < 2,500)	106,412	24.7%	696	6.7%	6,282	21.1%
Zip Code Unknown or Urbanicity Not Available	3	0.0%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status						
Average Median Household Income <sup>3</sup>	73,234.4	29,059.6	87,227.7	32,420.0	58,154.0	23,021.9
Average Median Home Value <sup>3</sup>	297,661.3	229,615.7	448,082.0	301,289.8	214,630.4	148,616.8
Average Percent Unemployment <sup>3</sup>	5.1	2.5	4.7	1.8	6.9	3.5
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	431,049	100.0%	10,337	100.0%	29,781	100.0%
Median Home Value Available	431,049	100.0%	10,337	100.0%	29,781	100.0%
Percent Unemployment Available	431,049	100.0%	10,337	100.0%	29,781	100.0%
All SES Indicators Available	431,049	100.0%	10,337	100.0%	29,781	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,584	0.4%	49	0.5%	176	0.6%
Adult BMI 20-29	23,222	5.4%	567	5.5%	1,911	6.4%
Adult BMI 30-39	31,963	7.4%	342	3.3%	4,543	15.3%
Adult BMI 40 or greater	18,506	4.3%	100	1.0%	3,661	12.3%
Alcohol or Drug Abuse	9,589	2.2%	59	0.6%	1,272	4.3%
Alcohol Use Abuse	5,588	1.3%	46	0.4%	682	2.3%
Any Cancer	11,172	2.6%	169	1.6%	1,468	4.9%
Asthma	24,829	5.8%	373	3.6%	3,415	11.5%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) Among Those Less Than 65 Years of Age, with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>
1,157	70.2%	852	81.1%	93,078	68.7%	193,308	76.5%	127,854	71.7%
11	0.7%	8	0.8%	1,254	0.9%	1,826	0.7%	1,646	0.9%
479	29.1%	190	18.1%	41,144	30.4%	57,621	22.8%	48,791	27.4%
0	0.0%	0	0.0%	1	0.0%	2	0.0%	1	0.0%
65,766.6	24,079.5	71,152.4	26,682.2	75,860.4	28,134.3	73,088.7	29,325.0	73,440.9	28,057.7
253,764.2	160,197.9	312,296.9	220,920.3	305,692.2	234,690.5	297,213.4	228,577.1	298,296.3	229,605.7
5.6	3.0	5.4	2.3	4.7	2.2	5.1	2.4	5.1	2.5
1,647	100.0%	1,050	100.0%	135,477	100.0%	252,757	100.0%	178,292	100.0%
1,647	100.0%	1,050	100.0%	135,477	100.0%	252,757	100.0%	178,292	100.0%
1,647	100.0%	1,050	100.0%	135,477	100.0%	252,757	100.0%	178,292	100.0%
1,647	100.0%	1,050	100.0%	135,477	100.0%	252,757	100.0%	178,292	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>									
5	0.3%	3	0.3%	617	0.5%	734	0.3%	850	0.5%
72	4.4%	66	6.3%	7,888	5.8%	12,718	5.0%	10,504	5.9%
134	8.1%	120	11.4%	11,711	8.6%	15,113	6.0%	16,850	9.5%
103	6.3%	62	5.9%	7,468	5.5%	7,112	2.8%	11,394	6.4%
58	3.5%	48	4.6%	4,576	3.4%	3,576	1.4%	6,013	3.4%
39	2.4%	27	2.6%	2,619	1.9%	2,175	0.9%	3,413	1.9%
44	2.7%	35	3.3%	4,856	3.6%	4,600	1.8%	6,572	3.7%
148	9.0%	79	7.5%	9,394	6.9%	11,420	4.5%	13,409	7.5%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	8,710	2.0%	93	0.9%	1,590	5.3%
Blood Stem Cell Transplant	29	0.0%	1	0.0%	1	0.0%
Chronic Kidney Disease	19,402	4.5%	272	2.6%	4,226	14.2%
Congestive Heart Failure	10,416	2.4%	65	0.6%	2,872	9.6%
Chronic Obstructive Pulmonary Disease (COPD)	16,905	3.9%	105	1.0%	2,781	9.3%
Coronary Artery Disease	20,680	4.8%	215	2.1%	3,713	12.5%
Cystic Fibrosis	77	0.0%	1	0.0%	3	0.0%
Diabetes Mellitus	51,423	11.9%	933	9.0%	9,052	30.4%
Drug Abuse Dependence	5,137	1.2%	25	0.2%	760	2.6%
HIV	1,802	0.4%	26	0.3%	522	1.8%
Hypertension	93,665	21.7%	1,462	14.1%	15,206	51.1%
Interstitial Lung Disease	1,575	0.4%	14	0.1%	321	1.1%
Liver Disease	13,517	3.1%	291	2.8%	1,403	4.7%
Neurologic Conditions	19,083	4.4%	169	1.6%	2,985	10.0%
Obesity	68,006	15.8%	679	6.6%	10,527	35.3%
Pulmonary Conditions	11,076	2.6%	179	1.7%	1,916	6.4%
Sickle Cell Disease	505	0.1%	3	0.0%	309	1.0%
Smoking	28,888	6.7%	271	2.6%	4,076	13.7%
Solid Organ or Stem Cell Transplant	320	0.1%	12	0.1%	60	0.2%
Solid Organ Transplant	291	0.1%	11	0.1%	59	0.2%
Vascular Disease	108,324	25.1%	1,682	16.3%	16,154	54.2%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	3,906	0.9%	61	0.6%	606	2.0%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) Among Those Less Than 65 Years of Age, with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>
44	2.7%	45	4.3%	3,791	2.8%	3,147	1.2%	5,563	3.1%
0	0.0%	0	0.0%	12	0.0%	15	0.0%	14	0.0%
107	6.5%	102	9.7%	8,321	6.1%	6,374	2.5%	13,028	7.3%
41	2.5%	67	6.4%	4,997	3.7%	2,374	0.9%	8,042	4.5%
87	5.3%	58	5.5%	9,438	7.0%	4,436	1.8%	12,469	7.0%
98	6.0%	118	11.2%	10,213	7.5%	6,323	2.5%	14,357	8.1%
0	0.0%	0	0.0%	39	0.0%	34	0.0%	43	0.0%
316	19.2%	262	25.0%	19,873	14.7%	20,987	8.3%	30,436	17.1%
25	1.5%	26	2.5%	2,487	1.8%	1,814	0.7%	3,323	1.9%
14	0.9%	6	0.6%	547	0.4%	687	0.3%	1,115	0.6%
445	27.0%	362	34.5%	36,927	27.3%	39,263	15.5%	54,402	30.5%
7	0.4%	8	0.8%	773	0.6%	452	0.2%	1,123	0.6%
84	5.1%	73	7.0%	5,732	4.2%	5,934	2.3%	7,583	4.3%
103	6.3%	95	9.0%	9,818	7.2%	5,913	2.3%	13,170	7.4%
336	20.4%	254	24.2%	25,452	18.8%	30,758	12.2%	37,248	20.9%
63	3.8%	52	5.0%	4,919	3.6%	3,947	1.6%	7,129	4.0%
1	0.1%	2	0.2%	12	0.0%	178	0.1%	327	0.2%
146	8.9%	129	12.3%	14,076	10.4%	10,190	4.0%	18,698	10.5%
0	0.0%	2	0.2%	125	0.1%	121	0.0%	199	0.1%
0	0.0%	2	0.2%	113	0.1%	106	0.0%	185	0.1%
497	30.2%	412	39.2%	43,074	31.8%	46,505	18.4%	61,819	34.7%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>									
23	1.4%	15	1.4%	1,679	1.2%	1,522	0.6%	2,384	1.3%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Inhaled	17,265	4.0%	252	2.4%	2,109	7.1%
Glucocorticoids NonSystemic	37,391	8.7%	766	7.4%	4,195	14.1%
Glucocorticoids Ophthalmic	2,490	0.6%	59	0.6%	316	1.1%
Glucocorticoids Systemic	81,203	18.8%	1,180	11.4%	8,657	29.1%
Glucocorticoids Topical	19,619	4.6%	482	4.7%	2,115	7.1%
Immune Modulators	8,573	2.0%	142	1.4%	1,272	4.3%
Immunosuppressants	6,174	1.4%	91	0.9%	983	3.3%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	17,286	4.0%	245	2.4%	1,878	6.3%
Angiotensin receptor blockers (ARBs)	14,727	3.4%	362	3.5%	2,161	7.3%
Vasopressors	529	0.1%	8	0.1%	97	0.3%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.5	0.2	0.9	1.3	2.3
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	78,627	18.2%	1,777	17.2%	6,754	22.7%
Diarrhea	11,186	2.6%	201	1.9%	1,318	4.4%
Dyspnea/Short of Breath	53,213	12.3%	1,096	10.6%	7,234	24.3%
Fever	45,116	10.5%	1,186	11.5%	4,010	13.5%
Headache	6,019	1.4%	106	1.0%	602	2.0%
Malaise or Fatigue	29,045	6.7%	583	5.6%	3,120	10.5%
Multisystem Inflammatory Syndrome	51	0.0%	0	0.0%	8	0.0%
Myalgia	12,720	3.0%	289	2.8%	1,030	3.5%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) Among Those Less Than 65 Years of Age, with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>
86	5.2%	47	4.5%	7,563	5.6%	7,208	2.9%	10,057	5.6%
176	10.7%	120	11.4%	14,337	10.6%	17,797	7.0%	19,594	11.0%
15	0.9%	11	1.0%	919	0.7%	1,170	0.5%	1,320	0.7%
382	23.2%	218	20.8%	32,090	23.7%	38,676	15.3%	42,527	23.9%
85	5.2%	70	6.7%	6,767	5.0%	10,100	4.0%	9,519	5.3%
35	2.1%	45	4.3%	3,732	2.8%	3,347	1.3%	5,226	2.9%
32	1.9%	37	3.5%	2,757	2.0%	2,274	0.9%	3,900	2.2%
<b>Concurrent Use Of (-30, 0)</b>									
108	6.6%	61	5.8%	6,923	5.1%	8,071	3.2%	9,215	5.2%
80	4.9%	46	4.4%	5,104	3.8%	6,974	2.8%	7,753	4.3%
1	0.1%	1	0.1%	222	0.2%	200	0.1%	329	0.2%
<b>Comorbidity</b>									
0.7	1.7	1.0	2.0	0.8	1.7	0.3	1.1	0.8	1.7
<b>Symptoms at Diagnosis (-1, 14)</b>									
311	18.9%	212	20.2%	24,679	18.2%	44,894	17.8%	33,733	18.9%
64	3.9%	34	3.2%	4,032	3.0%	5,537	2.2%	5,649	3.2%
293	17.8%	188	17.9%	19,115	14.1%	25,287	10.0%	27,926	15.7%
187	11.4%	120	11.4%	13,202	9.7%	26,411	10.4%	18,705	10.5%
29	1.8%	13	1.2%	1,410	1.0%	3,859	1.5%	2,160	1.2%
124	7.5%	79	7.5%	10,135	7.5%	15,004	5.9%	14,041	7.9%
0	0.0%	0	0.0%	14	0.0%	29	0.0%	22	0.0%
56	3.4%	37	3.5%	3,837	2.8%	7,471	3.0%	5,249	2.9%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Nasal Congestion	13,218	3.1%	172	1.7%	677	2.3%
Nausea or Vomiting	14,693	3.4%	198	1.9%	1,816	6.1%
Smell or Taste Disturbance	11,908	2.8%	187	1.8%	799	2.7%
Sore Throat	19,968	4.6%	390	3.8%	846	2.8%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory	6.3	9.6	5.0	7.5	9.8	13.9
Mean number of emergency room	0.3	1.4	0.1	0.8	0.8	2.4
Mean number of inpatient hospital	0.1	0.3	0.0	0.2	0.1	0.5
Mean number of non-acute	0.0	0.2	0.0	0.1	0.0	0.3
Mean number of other ambulatory encounters	0.9	4.2	0.7	2.8	1.9	6.6
Mean number of filled prescriptions	8.6	13.2	4.8	7.9	15.2	16.1
Mean number of generics dispensed	3.8	4.6	2.3	3.1	6.7	5.4
Mean number of unique drug classes dispensed	3.6	4.2	2.2	2.8	6.2	4.8
<b>COVID Diagnosis (-7, 7)</b>						
Diagnosis Code for COVID-19	338,412	78.5%	7,837	75.8%	24,499	82.3%



**Table 1ab. Aggregated Characteristics of COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) Among Those Less Than 65 Years of Age, with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>
43	2.6%	19	1.8%	4,059	3.0%	8,248	3.3%	4,970	2.8%
82	5.0%	49	4.7%	5,243	3.9%	7,305	2.9%	7,388	4.1%
40	2.4%	18	1.7%	3,300	2.4%	7,564	3.0%	4,344	2.4%
66	4.0%	42	4.0%	5,568	4.1%	13,056	5.2%	6,912	3.9%
<b>Health Service Utilization Intensity</b>									
6.6	9.7	8.9	12.8	7.8	10.3	5.1	8.0	8.0	10.9
0.5	1.5	0.5	1.7	0.4	1.6	0.2	0.9	0.4	1.8
0.1	0.4	0.1	0.4	0.1	0.4	0.0	0.2	0.1	0.4
0.0	0.3	0.0	0.3	0.0	0.2	0.0	0.1	0.0	0.2
1.8	5.3	1.6	5.0	1.6	5.2	0.5	3.0	1.6	5.4
11.2	14.3	12.0	13.2	12.1	14.7	6.1	10.2	12.2	14.7
4.7	4.7	5.3	4.6	5.0	4.7	2.8	3.8	5.1	4.8
4.3	4.3	4.9	4.1	4.7	4.3	2.7	3.5	4.8	4.3
<b>COVID Diagnosis (-7, 7)</b>									
1,245	75.6%	833	79.3%	104,496	77.1%	199,502	78.9%	138,910	77.9%

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	54	0.0%	2	0.0%	7	0.0%
Intensive Care	8,757	2.0%	124	1.2%	1,895	6.4%
Mechanical Ventilation	2,956	0.7%	41	0.4%	667	2.2%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	627	0.1%	6	0.1%	229	0.8%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ab. Aggregated Characteristics of COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) Among Those Less Than 65 Years of Age, with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Race (American Indian or Alaska Native)		Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>	Number/ Mean	Percent/Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>									
0	0.0%	0	0.0%	11	0.0%	34	0.0%	20	0.0%
41	2.5%	41	3.9%	3,425	2.5%	3,231	1.3%	5,526	3.1%
17	1.0%	11	1.0%	1,290	1.0%	930	0.4%	2,026	1.1%
1	0.1%	2	0.2%	207	0.2%	182	0.1%	445	0.2%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
Unique patients	29,267	N/A	534	N/A	5,285	N/A	158	N/A
<b>Demographic Characteristics</b>								
Age (years)	53.1	10.6	49.2	10.7	55.3	8.4	53.7	9.2
Age								
0-5 years	70	0.2%	0	0.0%	0	0.0%	0	0.0%
6-11 years	41	0.1%	0	0.0%	1	0.0%	0	0.0%
12-18 years	169	0.6%	0	0.0%	6	0.1%	0	0.0%
19-29 years	1,162	4.0%	24	4.5%	89	1.7%	7	4.4%
30-39 years	2,502	8.5%	105	19.7%	342	6.5%	9	5.7%
40-49 years	4,643	15.9%	122	22.8%	719	13.6%	29	18.4%
50-64 years	20,680	70.7%	283	53.0%	4,128	78.1%	113	71.5%
65-74 years								
≥ 75 years	13,963	47.7%	241	45.1%	2,959	56.0%	77	48.7%
Sex	15,304	52.3%	293	54.9%	2,326	44.0%	81	51.3%
Female								
Male	158	0.5%	0	0.0%	0	0.0%	158	100.0%
Race <sup>2</sup>	534	1.8%	534	100.0%	0	0.0%	0	0.0%
American Indian or Alaska Native	5,285	18.1%	0	0.0%	5,285	100.0%	0	0.0%
Asian	134	0.5%	0	0.0%	0	0.0%	0	0.0%
Black or African American	12,280	42.0%	0	0.0%	0	0.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	10,876	37.2%	0	0.0%	0	0.0%	0	0.0%

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	134	N/A	10,876	N/A	12,280	N/A	16,987	N/A
<b>Demographic Characteristics</b>								
Age (years)	54.4	7.6	55.8	8.6	49.9	12.4	55.4	8.6
Age								
0-5 years	0	0.0%	8	0.1%	62	0.5%	8	0.0%
6-11 years	0	0.0%	3	0.0%	37	0.3%	4	0.0%
12-18 years	0	0.0%	22	0.2%	141	1.1%	28	0.2%
19-29 years	2	1.5%	222	2.0%	818	6.7%	344	2.0%
30-39 years	11	8.2%	548	5.0%	1,487	12.1%	1,015	6.0%
40-49 years	22	16.4%	1,291	11.9%	2,460	20.0%	2,183	12.9%
50-64 years	99	73.9%	8,782	80.7%	7,275	59.2%	13,405	78.9%
65-74 years								
≥ 75 years	47	35.1%	5,152	47.4%	5,487	44.7%	8,476	49.9%
Sex	87	64.9%	5,724	52.6%	6,793	55.3%	8,511	50.1%
Female								
Male	0	0.0%	0	0.0%	0	0.0%	158	0.9%
Race <sup>2</sup>	0	0.0%	0	0.0%	0	0.0%	534	3.1%
American Indian or Alaska Native	0	0.0%	0	0.0%	0	0.0%	5,285	31.1%
Asian	134	100.0%	0	0.0%	0	0.0%	134	0.8%
Black or African American	0	0.0%	0	0.0%	12,280	100.0%	0	0.0%
Native Hawaiian or Other Pacific Islander	0	0.0%	10,876	100.0%	0	0.0%	10,876	64.0%

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
Unknown								
White	2,504	8.6%	72	13.5%	44	0.8%	34	21.5%
Hispanic origin	11,050	37.8%	111	20.8%	3,804	72.0%	84	53.2%
Yes	15,713	53.7%	351	65.7%	1,437	27.2%	40	25.3%
No								
Unknown	1,515	5.2%	38	7.1%	355	6.7%	9	5.7%
May 2020	914	3.1%	12	2.2%	239	4.5%	7	4.4%
June 2020	1,144	3.9%	27	5.1%	249	4.7%	5	3.2%
July 2020	2,816	9.6%	42	7.9%	625	11.8%	15	9.5%
August 2020	1,715	5.9%	18	3.4%	364	6.9%	9	5.7%
September 2020	1,172	4.0%	13	2.4%	194	3.7%	4	2.5%
October 2020	1,963	6.7%	29	5.4%	290	5.5%	10	6.3%
November 2020	4,091	14.0%	85	15.9%	590	11.2%	25	15.8%
December 2020	5,126	17.5%	81	15.2%	796	15.1%	23	14.6%
January 2021	4,718	16.1%	99	18.5%	842	15.9%	31	19.6%
February 2021	2,245	7.7%	45	8.4%	431	8.2%	11	7.0%
March 2021	1,848	6.3%	45	8.4%	310	5.9%	9	5.7%
Census Bureau (CB) Region								
Midwest	4,882	16.7%	49	9.2%	710	13.4%	15	9.5%
Northeast	2,500	8.5%	70	13.1%	360	6.8%	1	0.6%
South	17,089	58.4%	166	31.1%	3,953	74.8%	71	44.9%
West	4,796	16.4%	249	46.6%	262	5.0%	71	44.9%

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unknown								
White	5	3.7%	180	1.7%	2,169	17.7%	335	2.0%
Hispanic origin	99	73.9%	6,916	63.6%	36	0.3%	11,014	64.8%
Yes	30	22.4%	3,780	34.8%	10,075	82.0%	5,638	33.2%
No								
Unknown	9	6.7%	381	3.5%	723	5.9%	792	4.7%
May 2020	3	2.2%	254	2.3%	399	3.2%	515	3.0%
June 2020	7	5.2%	291	2.7%	565	4.6%	579	3.4%
July 2020	14	10.4%	793	7.3%	1,327	10.8%	1,489	8.8%
August 2020	9	6.7%	580	5.3%	735	6.0%	980	5.8%
September 2020	3	2.2%	452	4.2%	506	4.1%	666	3.9%
October 2020	7	5.2%	803	7.4%	824	6.7%	1,139	6.7%
November 2020	22	16.4%	1,704	15.7%	1,665	13.6%	2,426	14.3%
December 2020	21	15.7%	2,108	19.4%	2,097	17.1%	3,029	17.8%
January 2021	18	13.4%	1,904	17.5%	1,824	14.9%	2,894	17.0%
February 2021	14	10.4%	896	8.2%	848	6.9%	1,397	8.2%
March 2021	7	5.2%	710	6.5%	767	6.2%	1,081	6.4%
Census Bureau (CB) Region								
Midwest	21	15.7%	2,181	20.1%	1,906	15.5%	2,976	17.5%
Northeast	8	6.0%	814	7.5%	1,247	10.2%	1,253	7.4%
South	60	44.8%	6,212	57.1%	6,627	54.0%	10,462	61.6%
West	45	33.6%	1,669	15.3%	2,500	20.4%	2,296	13.5%

**Table 1a. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Urbanicity								
Urban (population >= 50,000)	19,871	67.9%	494	92.5%	3,798	71.9%	95	60.1%
Suburban (population 2,500 - 49,999)	338	1.2%	2	0.4%	72	1.4%	2	1.3%
Rural (population < 2,500)	9,058	30.9%	38	7.1%	1,415	26.8%	61	38.6%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status								
Average Median Household	61,097.5	23,005.3	78,859.4	26,842.8	50,843.5	19,350.9	56,878.6	19,332.8
Average Median Home Value <sup>3</sup>	215,689.6	146,773.0	362,073.8	234,367.8	168,091.2	103,400.6	190,392.4	104,155.7
Average Percent Unemployment <sup>3</sup>	5.9	3.0	5.0	1.9	7.5	3.8	6.4	3.9
Missingness in Proxies for Socioeconomic Status (SES)								
Median Household Income Available	29,267	100.0%	534	100.0%	5,285	100.0%	158	100.0%
Median Home Value Available	29,267	100.0%	534	100.0%	5,285	100.0%	158	100.0%
Percent Unemployment Available	29,267	100.0%	534	100.0%	5,285	100.0%	158	100.0%
All SES Indicators Available	29,267	100.0%	534	100.0%	5,285	100.0%	158	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>								
Adult BMI 19.9 or less	260	0.9%	1	0.2%	66	1.2%	1	0.6%
Adult BMI 20-29	2,033	6.9%	40	7.5%	424	8.0%	5	3.2%



**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Urbanicity								
Urban (population >= 50,000)	111	82.8%	6,088	56.0%	9,285	75.6%	10,586	62.3%
Suburban (population 2,500 - 49,999)	2	1.5%	146	1.3%	114	0.9%	224	1.3%
Rural (population < 2,500)	21	15.7%	4,642	42.7%	2,881	23.5%	6,177	36.4%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status								
Average Median Household	63,251.5	23,727.5	62,302.9	21,406.2	63,701.5	24,473.8	59,215.1	21,560.8
Average Median Home Value <sup>3</sup>	262,964.9	181,449.9	204,264.0	131,010.1	239,738.1	165,595.9	198,304.8	130,524.1
Average Percent Unemployment <sup>3</sup>	5.6	2.1	5.4	2.6	5.8	2.9	6.1	3.1
Missingness in Proxies for Socioeconomic Status (SES)								
Median Household Income Available	134	100.0%	10,876	100.0%	12,280	100.0%	16,987	100.0%
Median Home Value Available	134	100.0%	10,876	100.0%	12,280	100.0%	16,987	100.0%
Percent Unemployment Available	134	100.0%	10,876	100.0%	12,280	100.0%	16,987	100.0%
All SES Indicators Available	134	100.0%	10,876	100.0%	12,280	100.0%	16,987	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>								
Adult BMI 19.9 or less	1	0.7%	121	1.1%	70	0.6%	190	1.1%
Adult BMI 20-29	14	10.4%	858	7.9%	692	5.6%	1,341	7.9%

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
Adult BMI 30-39	4,736	16.2%	44	8.2%	1,102	20.9%	19	12.0%
Adult BMI 40 or greater	4,277	14.6%	21	3.9%	1,161	22.0%	24	15.2%
Alcohol or Drug Abuse	1,970	6.7%	7	1.3%	415	7.9%	14	8.9%
Alcohol Use Abuse	1,098	3.8%	6	1.1%	215	4.1%	10	6.3%
Any Cancer	2,149	7.3%	25	4.7%	446	8.4%	13	8.2%
Asthma	3,787	12.9%	56	10.5%	908	17.2%	26	16.5%
Autoimmune Conditions	1,681	5.7%	9	1.7%	450	8.5%	16	10.1%
Blood Stem Cell Transplant	5	0.0%	0	0.0%	0	0.0%	0	0.0%
Chronic Kidney Disease	6,252	21.4%	73	13.7%	1,771	33.5%	34	21.5%
Congestive Heart Failure	4,242	14.5%	22	4.1%	1,315	24.9%	21	13.3%
Chronic Obstructive Pulmonary Disease (COPD)	4,949	16.9%	25	4.7%	1,052	19.9%	28	17.7%
Coronary Artery Disease	5,850	20.0%	46	8.6%	1,442	27.3%	29	18.4%
Cystic Fibrosis	15	0.1%	0	0.0%	1	0.0%	0	0.0%
Diabetes Mellitus	11,861	40.5%	162	30.3%	2,958	56.0%	77	48.7%
Drug Abuse Dependence	1,150	3.9%	2	0.4%	261	4.9%	6	3.8%
HIV	261	0.9%	2	0.4%	114	2.2%	0	0.0%
Hypertension	17,068	58.3%	222	41.6%	4,136	78.3%	92	58.2%
Interstitial Lung Disease	588	2.0%	3	0.6%	157	3.0%	3	1.9%
Liver Disease	2,824	9.6%	32	6.0%	453	8.6%	21	13.3%
Neurologic Conditions	3,947	13.5%	26	4.9%	866	16.4%	18	11.4%
Obesity	11,486	39.2%	106	19.9%	2,775	52.5%	61	38.6%
Pulmonary Conditions	7,013	24.0%	118	22.1%	1,229	23.3%	42	26.6%

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Adult BMI 30-39	28	20.9%	2,003	18.4%	1,540	12.5%	3,196	18.8%
Adult BMI 40 or greater	11	8.2%	1,824	16.8%	1,236	10.1%	3,041	17.9%
Alcohol or Drug Abuse	16	11.9%	998	9.2%	520	4.2%	1,450	8.5%
Alcohol Use Abuse	6	4.5%	551	5.1%	310	2.5%	788	4.6%
Any Cancer	6	4.5%	969	8.9%	690	5.6%	1,459	8.6%
Asthma	15	11.2%	1,547	14.2%	1,235	10.1%	2,552	15.0%
Autoimmune Conditions	12	9.0%	762	7.0%	432	3.5%	1,249	7.4%
Blood Stem Cell Transplant	0	0.0%	3	0.0%	2	0.0%	3	0.0%
Chronic Kidney Disease	35	26.1%	2,748	25.3%	1,591	13.0%	4,661	27.4%
Congestive Heart Failure	19	14.2%	1,986	18.3%	879	7.2%	3,363	19.8%
Chronic Obstructive Pulmonary Disease (COPD)	18	13.4%	2,774	25.5%	1,052	8.6%	3,897	22.9%
Coronary Artery Disease	30	22.4%	2,906	26.7%	1,397	11.4%	4,453	26.2%
Cystic Fibrosis	0	0.0%	10	0.1%	4	0.0%	11	0.1%
Diabetes Mellitus	62	46.3%	4,886	44.9%	3,716	30.3%	8,145	47.9%
Drug Abuse Dependence	11	8.2%	586	5.4%	284	2.3%	866	5.1%
HIV	0	0.0%	67	0.6%	78	0.6%	183	1.1%
Hypertension	82	61.2%	7,116	65.4%	5,420	44.1%	11,648	68.6%
Interstitial Lung Disease	3	2.2%	266	2.4%	156	1.3%	432	2.5%
Liver Disease	18	13.4%	1,375	12.6%	925	7.5%	1,899	11.2%
Neurologic Conditions	30	22.4%	2,099	19.3%	908	7.4%	3,039	17.9%
Obesity	53	39.6%	4,743	43.6%	3,748	30.5%	7,738	45.6%
Pulmonary Conditions	30	22.4%	2,738	25.2%	2,856	23.3%	4,157	24.5%

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
Sickle Cell Disease	172	0.6%	1	0.2%	119	2.3%	0	0.0%
Smoking	6,098	20.8%	39	7.3%	1,293	24.5%	31	19.6%
Solid Organ or Stem Cell	116	0.4%	4	0.7%	26	0.5%	0	0.0%
Solid Organ Transplant	111	0.4%	4	0.7%	26	0.5%	0	0.0%
Vascular Disease	18,720	64.0%	231	43.3%	4,329	81.9%	103	65.2%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>								
Chemotherapy	922	3.2%	8	1.5%	201	3.8%	5	3.2%
Glucocorticoids Inhaled	3,356	11.5%	37	6.9%	651	12.3%	12	7.6%
Glucocorticoids NonSystemic	5,265	18.0%	69	12.9%	1,065	20.2%	25	15.8%
Glucocorticoids Ophthalmic	366	1.3%	7	1.3%	85	1.6%	2	1.3%
Glucocorticoids Systemic	12,479	42.6%	165	30.9%	2,289	43.3%	72	45.6%
Glucocorticoids Topical	1,981	6.8%	30	5.6%	430	8.1%	14	8.9%
Immune Modulators	1,924	6.6%	30	5.6%	447	8.5%	12	7.6%
Immunosuppressants	1,298	4.4%	12	2.2%	322	6.1%	10	6.3%
<b>Concurrent Use Of (-30, 0)</b>								
Angiotensin-converting enzyme (ACE) inhibitors	2,422	8.3%	34	6.4%	440	8.3%	22	13.9%
Angiotensin receptor blockers	2,173	7.4%	40	7.5%	520	9.8%	13	8.2%
Vasopressors	407	1.4%	6	1.1%	85	1.6%	1	0.6%
<b>Comorbidity</b>								
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.2	2.9	1.0	1.9	3.0	3.2	2.1	2.7

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Sickle Cell Disease	0	0.0%	2	0.0%	50	0.4%	122	0.7%
Smoking	33	24.6%	3,159	29.0%	1,543	12.6%	4,555	26.8%
Solid Organ or Stem Cell	2	1.5%	48	0.4%	36	0.3%	80	0.5%
Solid Organ Transplant	2	1.5%	45	0.4%	34	0.3%	77	0.5%
Vascular Disease	93	69.4%	7,829	72.0%	6,135	50.0%	12,585	74.1%
Chemotherapy	3	2.2%	390	3.6%	315	2.6%	607	3.6%
Glucocorticoids Inhaled	10	7.5%	1,621	14.9%	1,025	8.3%	2,331	13.7%
Glucocorticoids NonSystemic	20	14.9%	2,353	21.6%	1,733	14.1%	3,532	20.8%
Glucocorticoids Ophthalmic	2	1.5%	138	1.3%	132	1.1%	234	1.4%
Glucocorticoids Systemic	46	34.3%	5,338	49.1%	4,569	37.2%	7,910	46.6%
Glucocorticoids Topical	10	7.5%	815	7.5%	682	5.6%	1,299	7.6%
Immune Modulators	12	9.0%	807	7.4%	616	5.0%	1,308	7.7%
Immunosuppressants	12	9.0%	567	5.2%	375	3.1%	923	5.4%
<b>Concurrent Use Of (-30, 0)</b>								
Angiotensin-converting enzyme (ACE) inhibitors	12	9.0%	1,011	9.3%	903	7.4%	1,519	8.9%
Angiotensin receptor blockers	8	6.0%	779	7.2%	813	6.6%	1,360	8.0%
Vasopressors	0	0.0%	180	1.7%	135	1.1%	272	1.6%
<b>Comorbidity</b>								
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.4	3.2	2.8	3.1	1.3	2.4	2.8	3.1

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>								
Cough	7,495	25.6%	171	32.0%	1,325	25.1%	35	22.2%
Diarrhea	2,970	10.1%	58	10.9%	585	11.1%	20	12.7%
Dyspnea/Short of Breath	21,666	74.0%	388	72.7%	3,978	75.3%	117	74.1%
Fever	7,198	24.6%	165	30.9%	1,347	25.5%	33	20.9%
Headache	516	1.8%	11	2.1%	103	1.9%	2	1.3%
Malaise or Fatigue	5,677	19.4%	79	14.8%	1,210	22.9%	26	16.5%
Multisystem Inflammatory Syndrome	45	0.2%	0	0.0%	9	0.2%	0	0.0%
Myalgia	701	2.4%	7	1.3%	119	2.3%	4	2.5%
Nasal Congestion	185	0.6%	1	0.2%	32	0.6%	0	0.0%
Nausea or Vomiting	3,415	11.7%	32	6.0%	722	13.7%	20	12.7%
Smell or Taste Disturbance	350	1.2%	4	0.7%	74	1.4%	2	1.3%
Sore Throat	342	1.2%	8	1.5%	63	1.2%	1	0.6%
<b>Health Service Utilization Intensity</b>								
Mean number of ambulatory encounters	13.1	18.0	9.7	14.1	16.3	21.8	12.3	16.8
Mean number of emergency room encounters	1.5	3.3	0.9	2.9	1.9	4.0	1.5	2.5
Mean number of inpatient hospital encounters	0.3	0.8	0.1	0.5	0.4	0.9	0.4	1.0
Mean number of non-acute institutional encounters	0.1	0.4	0.0	0.2	0.1	0.4	0.1	0.3

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>								
Cough	38	28.4%	2,628	24.2%	3,298	26.9%	4,197	24.7%
Diarrhea	12	9.0%	1,151	10.6%	1,144	9.3%	1,826	10.7%
Dyspnea/Short of Breath	95	70.9%	8,213	75.5%	8,875	72.3%	12,791	75.3%
Fever	35	26.1%	2,443	22.5%	3,175	25.9%	4,023	23.7%
Headache	4	3.0%	153	1.4%	243	2.0%	273	1.6%
Malaise or Fatigue	32	23.9%	2,389	22.0%	1,941	15.8%	3,736	22.0%
Multisystem Inflammatory Syndrome	0	0.0%	7	0.1%	29	0.2%	16	0.1%
Myalgia	6	4.5%	262	2.4%	303	2.5%	398	2.3%
Nasal Congestion	1	0.7%	67	0.6%	84	0.7%	101	0.6%
Nausea or Vomiting	14	10.4%	1,339	12.3%	1,288	10.5%	2,127	12.5%
Smell or Taste Disturbance	0	0.0%	118	1.1%	152	1.2%	198	1.2%
Sore Throat	1	0.7%	111	1.0%	158	1.3%	184	1.1%
<b>Health Service Utilization Intensity</b>								
Mean number of ambulatory encounters	16.8	21.7	15.2	18.3	9.9	15.4	15.4	19.4
Mean number of emergency room encounters	1.7	3.1	1.8	3.7	1.1	2.4	1.8	3.8
Mean number of inpatient hospital encounters	0.3	0.8	0.4	0.9	0.2	0.7	0.4	0.9
Mean number of non-acute institutional encounters	0.1	0.5	0.1	0.5	0.0	0.3	0.1	0.5

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
Mean number of other ambulatory encounters	3.4	9.2	2.2	5.7	4.3	10.3	3.7	7.8
Mean number of filled prescriptions	21.1	21.1	11.8	13.5	24.8	21.1	22.1	20.3
Mean number of generics dispensed	8.9	6.6	5.6	5.1	10.6	6.6	9.0	6.3
Mean number of unique drug classes dispensed	8.2	5.9	5.2	4.5	9.7	5.9	8.3	5.7
<b>COVID Diagnosis (-7, 7)</b>								
COVID Positive Diagnosis	29,267	100.0%	534	100.0%	5,285	100.0%	158	100.0%



**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of other ambulatory encounters	3.8	8.4	4.7	10.7	1.8	6.7	4.5	10.4
Mean number of filled prescriptions	19.4	16.9	27.1	23.2	14.6	17.8	25.8	22.4
Mean number of generics dispensed	8.9	6.1	11.0	6.9	6.6	5.9	10.7	6.8
Mean number of unique drug classes dispensed	8.2	5.5	10.1	6.2	6.1	5.3	9.8	6.0
<b>COVID Diagnosis (-7, 7)</b>								
COVID Positive Diagnosis	134	100.0%	10,876	100.0%	12,280	100.0%	16,987	100.0%

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Overall		Race (Asian)		Race (Black or African American)		Race (American Indian or Alaska Native)	
	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>	Number/Mean	Percent/Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>								
Extracorporeal Membrane Oxygenation (ECMO)	118	0.4%	7	1.3%	11	0.2%	0	0.0%
Intensive Care	14,961	51.1%	271	50.7%	2,787	52.7%	80	50.6%
Mechanical Ventilation	4,722	16.1%	79	14.8%	913	17.3%	30	19.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	914	3.1%	11	2.1%	315	6.0%	1	0.6%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ac. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Race**

Patient Characteristics	Race (Native Hawaiian or Other Pacific Islander)		Race (White)		Race (Unknown)		Race (Known)	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>								
Extracorporeal Membrane Oxygenation (ECMO)	0	0.0%	26	0.2%	74	0.6%	44	0.3%
Intensive Care	71	53.0%	5,586	51.4%	6,166	50.2%	8,795	51.8%
Mechanical Ventilation	21	15.7%	2,002	18.4%	1,677	13.7%	3,045	17.9%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	3	2.2%	318	2.9%	266	2.2%	648	3.8%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ad. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	431,049	N/A	28,320	N/A	402,729	N/A
<b>Demographic Characteristics</b>						
Age (years)	40.7	15.5	53.2	10.5	39.8	15.5
Age						
0-5 years	6,786	1.6%	65	0.2%	6,721	1.7%
6-11 years	10,352	2.4%	38	0.1%	10,314	2.6%
12-18 years	26,823	6.2%	151	0.5%	26,672	6.6%
19-29 years	77,963	18.1%	1,084	3.8%	76,879	19.1%
30-39 years	77,074	17.9%	2,381	8.4%	74,693	18.5%
40-49 years	80,476	18.7%	4,505	15.9%	75,971	18.9%
50-64 years	151,575	35.2%	20,096	71.0%	131,479	32.6%
65-74 years						
≥ 75 years	230,341	53.4%	13,449	47.5%	216,892	53.9%
Sex	200,708	46.6%	14,871	52.5%	185,837	46.1%
Female						
Male	1,647	0.4%	153	0.5%	1,494	0.4%
Race <sup>2</sup>	10,337	2.4%	512	1.8%	9,825	2.4%
American Indian or Alaska Native	29,781	6.9%	5,144	18.2%	24,637	6.1%
Asian	1,050	0.2%	126	0.4%	924	0.2%
Black or African American	252,757	58.6%	11,881	42.0%	240,876	59.8%
Native Hawaiian or Other Pacific Islander	135,477	31.4%	10,504	37.1%	124,973	31.0%
Unknown						
White	37,821	8.8%	2,402	8.5%	35,419	8.8%
Hispanic origin	59,385	13.8%	10,694	37.8%	48,691	12.1%

**Table 1ad. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Yes	333,843	77.4%	15,224	53.8%	318,619	79.1%
No						
Unknown	10,761	2.5%	1,579	5.6%	9,182	2.3%
May 2020	9,901	2.3%	880	3.1%	9,021	2.2%
June 2020	19,500	4.5%	1,272	4.5%	18,228	4.5%
July 2020	36,946	8.6%	2,777	9.8%	34,169	8.5%
August 2020	21,871	5.1%	1,552	5.5%	20,319	5.0%
September 2020	20,046	4.7%	1,143	4.0%	18,903	4.7%
October 2020	32,783	7.6%	2,032	7.2%	30,751	7.6%
November 2020	67,533	15.7%	4,147	14.6%	63,386	15.7%
December 2020	85,652	19.9%	5,110	18.0%	80,542	20.0%
January 2021	70,305	16.3%	4,292	15.2%	66,013	16.4%
February 2021	29,939	6.9%	1,960	6.9%	27,979	6.9%
March 2021	25,812	6.0%	1,576	5.6%	24,236	6.0%
Census Bureau (CB) Region						
Midwest	65,461	15.2%	4,735	16.7%	60,726	15.1%
Northeast	53,661	12.4%	2,402	8.5%	51,259	12.7%
South	215,038	49.9%	16,560	58.5%	198,478	49.3%
West	96,889	22.5%	4,623	16.3%	92,266	22.9%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	321,162	74.5%	19,207	67.8%	301,955	75.0%

**Table 1ad. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Suburban (population 2,500 - 49,999)	3,472	0.8%	327	1.2%	3,145	0.8%
Rural (population < 2,500)	106,412	24.7%	8,786	31.0%	97,626	24.2%
Zip Code Unknown or Urbanicity Not Available	3	0.0%	0	0.0%	3	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	73,234.4	29,059.6	61,023.2	22,944.8	74,093.1	29,345.6
Average Median Home Value <sup>3</sup>	297,661.3	229,615.7	215,092.8	145,714.6	303,467.6	233,874.6
Average Percent Unemployment <sup>3</sup>	5.1	2.5	5.9	3.0	5.0	2.4
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	431,049	100.0%	28,320	100.0%	402,729	100.0%
Median Home Value Available	431,049	100.0%	28,320	100.0%	402,729	100.0%
Percent Unemployment Available	431,049	100.0%	28,320	100.0%	402,729	100.0%
All SES Indicators Available	431,049	100.0%	28,320	100.0%	402,729	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,584	0.4%	237	0.8%	1,347	0.3%
Adult BMI 20-29	23,222	5.4%	1,912	6.8%	21,310	5.3%
Adult BMI 30-39	31,963	7.4%	4,455	15.7%	27,508	6.8%
Adult BMI 40 or greater	18,506	4.3%	3,933	13.9%	14,573	3.6%
Alcohol or Drug Abuse	9,589	2.2%	1,812	6.4%	7,777	1.9%
Alcohol Use Abuse	5,588	1.3%	998	3.5%	4,590	1.1%
Any Cancer	11,172	2.6%	2,032	7.2%	9,140	2.3%
Asthma	24,829	5.8%	3,334	11.8%	21,495	5.3%
Autoimmune Conditions	8,710	2.0%	1,595	5.6%	7,115	1.8%
Blood Stem Cell Transplant	29	0.0%	7	0.0%	22	0.0%
Chronic Kidney Disease	19,402	4.5%	5,813	20.5%	13,589	3.4%

**Table 1ad. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Congestive Heart Failure	10,416	2.4%	3,922	13.8%	6,494	1.6%
Chronic Obstructive Pulmonary Disease (COPD)	16,905	3.9%	4,501	15.9%	12,404	3.1%
Coronary Artery Disease	20,680	4.8%	5,407	19.1%	15,273	3.8%
Cystic Fibrosis	77	0.0%	13	0.0%	64	0.0%
Diabetes Mellitus	51,423	11.9%	11,210	39.6%	40,213	10.0%
Drug Abuse Dependence	5,137	1.2%	1,071	3.8%	4,066	1.0%
HIV	1,802	0.4%	243	0.9%	1,559	0.4%
Hypertension	93,665	21.7%	15,891	56.1%	77,774	19.3%
Interstitial Lung Disease	1,575	0.4%	495	1.7%	1,080	0.3%
Liver Disease	13,517	3.1%	2,560	9.0%	10,957	2.7%
Neurologic Conditions	19,083	4.4%	3,694	13.0%	15,389	3.8%
Obesity	68,006	15.8%	10,709	37.8%	57,297	14.2%
Pulmonary Conditions	11,076	2.6%	3,467	12.2%	7,609	1.9%
Sickle Cell Disease	505	0.1%	161	0.6%	344	0.1%
Smoking	28,888	6.7%	5,315	18.8%	23,573	5.9%
Solid Organ or Stem Cell Transplant	320	0.1%	113	0.4%	207	0.1%
Solid Organ Transplant	291	0.1%	106	0.4%	185	0.0%
Vascular Disease	108,324	25.1%	17,310	61.1%	91,014	22.6%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	3,906	0.9%	890	3.1%	3,016	0.7%
Glucocorticoids Inhaled	17,265	4.0%	2,966	10.5%	14,299	3.6%
Glucocorticoids NonSystemic	37,391	8.7%	4,841	17.1%	32,550	8.1%
Glucocorticoids Ophthalmic	2,490	0.6%	356	1.3%	2,134	0.5%
Glucocorticoids Systemic	81,203	18.8%	10,229	36.1%	70,974	17.6%

**Table 1ad. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Topical	19,619	4.6%	1,931	6.8%	17,688	4.4%
Immune Modulators	8,573	2.0%	1,850	6.5%	6,723	1.7%
Immunosuppressants	6,174	1.4%	1,260	4.4%	4,914	1.2%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	17,286	4.0%	2,383	8.4%	14,903	3.7%
Angiotensin receptor blockers (ARBs)	14,727	3.4%	2,154	7.6%	12,573	3.1%
Vasopressors	529	0.1%	279	1.0%	250	0.1%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.5	2.0	2.9	0.4	1.3
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	78,627	18.2%	9,616	34.0%	69,011	17.1%
Diarrhea	11,186	2.6%	3,181	11.2%	8,005	2.0%
Dyspnea/Short of Breath	53,213	12.3%	21,201	74.9%	32,012	7.9%
Fever	45,116	10.5%	8,613	30.4%	36,503	9.1%
Headache	6,019	1.4%	680	2.4%	5,339	1.3%
Malaise or Fatigue	29,045	6.7%	5,940	21.0%	23,105	5.7%
Multisystem Inflammatory Syndrome	51	0.0%	37	0.1%	14	0.0%
Myalgia	12,720	3.0%	1,220	4.3%	11,500	2.9%
Nasal Congestion	13,218	3.1%	450	1.6%	12,768	3.2%
Nausea or Vomiting	14,693	3.4%	3,759	13.3%	10,934	2.7%
Smell or Taste Disturbance	11,908	2.8%	510	1.8%	11,398	2.8%
Sore Throat	19,968	4.6%	706	2.5%	19,262	4.8%
Mean number of emergency room encounters	0.3	1.4	1.1	3.1	0.2	1.1
Mean number of inpatient hospital encounters	0.1	0.3	0.3	0.8	0.0	0.3



**Table 1ad. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by COVID-19 Hospitalization**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of non-acute institutional encounters	0.0	0.2	0.1	0.4	0.0	0.2
Mean number of other ambulatory encounters	0.9	4.2	3.1	8.9	0.8	3.6
Mean number of filled prescriptions	8.6	13.2	20.5	21.0	7.8	12.2
Mean number of generics dispensed	3.8	4.6	8.5	6.6	3.5	4.3
Mean number of unique drug classes dispensed	3.6	4.2	7.8	5.9	3.3	3.9
<b>COVID Diagnosis (-7, 7)</b>						
COVID Positive Diagnosis	338,412	78.5%	27,794	98.1%	310,618	77.1%
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	54	0.0%	54	0.2%	0	0.0%
Intensive Care	8,757	2.0%	8,451	29.8%	306	0.1%
Mechanical Ventilation	2,956	0.7%	2,870	10.1%	86	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	627	0.1%	615	2.2%	12	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ae. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	431,049	N/A	13,530	N/A	417,519	N/A
<b>Demographic Characteristics</b>						
Age (years)	40.7	15.5	51.9	11.3	40.4	15.5
Age						
0-5 years	6,786	1.6%	40	0.3%	6,746	1.6%
6-11 years	10,352	2.4%	25	0.2%	10,327	2.5%
12-18 years	26,823	6.2%	99	0.7%	26,724	6.4%
19-29 years	77,963	18.1%	708	5.2%	77,255	18.5%
30-39 years	77,074	17.9%	1,414	10.5%	75,660	18.1%
40-49 years	80,476	18.7%	2,216	16.4%	78,260	18.7%
50-64 years	151,575	35.2%	9,028	66.7%	142,547	34.1%
65-74 years						
≥ 75 years	230,341	53.4%	6,992	51.7%	223,349	53.5%
Sex	200,708	46.6%	6,538	48.3%	194,170	46.5%
Female						
Male	1,647	0.4%	71	0.5%	1,576	0.4%
Race <sup>2</sup>	10,337	2.4%	245	1.8%	10,092	2.4%
American Indian or Alaska Native	29,781	6.9%	2,351	17.4%	27,430	6.6%
Asian	1,050	0.2%	57	0.4%	993	0.2%
Black or African American	252,757	58.6%	5,828	43.1%	246,929	59.1%
Native Hawaiian or Other Pacific Islander	135,477	31.4%	4,978	36.8%	130,499	31.3%
Unknown						
White	37,821	8.8%	1,123	8.3%	36,698	8.8%
Hispanic origin	59,385	13.8%	4,842	35.8%	54,543	13.1%

**Table 1ae. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Yes	333,843	77.4%	7,565	55.9%	326,278	78.1%
No						
Unknown	10,761	2.5%	705	5.2%	10,056	2.4%
May 2020	9,901	2.3%	381	2.8%	9,520	2.3%
June 2020	19,500	4.5%	509	3.8%	18,991	4.5%
July 2020	36,946	8.6%	1,211	9.0%	35,735	8.6%
August 2020	21,871	5.1%	711	5.3%	21,160	5.1%
September 2020	20,046	4.7%	521	3.9%	19,525	4.7%
October 2020	32,783	7.6%	975	7.2%	31,808	7.6%
November 2020	67,533	15.7%	2,054	15.2%	65,479	15.7%
December 2020	85,652	19.9%	2,542	18.8%	83,110	19.9%
January 2021	70,305	16.3%	2,147	15.9%	68,158	16.3%
February 2021	29,939	6.9%	963	7.1%	28,976	6.9%
March 2021	25,812	6.0%	811	6.0%	25,001	6.0%
Census Bureau (CB) Region						
Midwest	65,461	15.2%	2,318	17.1%	63,143	15.1%
Northeast	53,661	12.4%	1,361	10.1%	52,300	12.5%
South	215,038	49.9%	7,709	57.0%	207,329	49.7%
West	96,889	22.5%	2,142	15.8%	94,747	22.7%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						
Urban (population >= 50,000)	321,162	74.5%	8,958	66.2%	312,204	74.8%

**Table 1ae. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Suburban (population 2,500 - 49,999)	3,472	0.8%	140	1.0%	3,332	0.8%
Rural (population < 2,500)	106,412	24.7%	4,432	32.8%	101,980	24.4%
Zip Code Unknown or Urbanicity Not Available	3	0.0%	0	0.0%	3	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	73,234.4	29,059.6	62,369.4	23,981.2	73,586.5	29,176.8
Average Median Home Value <sup>3</sup>	297,661.3	229,615.7	222,942.9	157,021.8	300,082.6	231,409.1
Average Percent Unemployment <sup>3</sup>	5.1	2.5	5.9	3.1	5.1	2.4
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	431,049	100.0%	13,530	100.0%	417,519	100.0%
Median Home Value Available	431,049	100.0%	13,530	100.0%	417,519	100.0%
Percent Unemployment Available	431,049	100.0%	13,530	100.0%	417,519	100.0%
All SES Indicators Available	431,049	100.0%	13,530	100.0%	417,519	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	1,584	0.4%	101	0.7%	1,483	0.4%
Adult BMI 20-29	23,222	5.4%	857	6.3%	22,365	5.4%
Adult BMI 30-39	31,963	7.4%	2,048	15.1%	29,915	7.2%
Adult BMI 40 or greater	18,506	4.3%	1,711	12.6%	16,795	4.0%
Alcohol or Drug Abuse	9,589	2.2%	789	5.8%	8,800	2.1%
Alcohol Use Abuse	5,588	1.3%	415	3.1%	5,173	1.2%
Any Cancer	11,172	2.6%	956	7.1%	10,216	2.4%
Asthma	24,829	5.8%	1,632	12.1%	23,197	5.6%
Autoimmune Conditions	8,710	2.0%	755	5.6%	7,955	1.9%
Blood Stem Cell Transplant	29	0.0%	3	0.0%	26	0.0%
Chronic Kidney Disease	19,402	4.5%	2,305	17.0%	17,097	4.1%

**Table 1ae. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Congestive Heart Failure	10,416	2.4%	1,452	10.7%	8,964	2.1%
Chronic Obstructive Pulmonary Disease (COPD)	16,905	3.9%	1,865	13.8%	15,040	3.6%
Coronary Artery Disease	20,680	4.8%	2,123	15.7%	18,557	4.4%
Cystic Fibrosis	77	0.0%	9	0.1%	68	0.0%
Diabetes Mellitus	51,423	11.9%	4,766	35.2%	46,657	11.2%
Drug Abuse Dependence	5,137	1.2%	498	3.7%	4,639	1.1%
HIV	1,802	0.4%	115	0.8%	1,687	0.4%
Hypertension	93,665	21.7%	6,991	51.7%	86,674	20.8%
Interstitial Lung Disease	1,575	0.4%	173	1.3%	1,402	0.3%
Liver Disease	13,517	3.1%	1,138	8.4%	12,379	3.0%
Neurologic Conditions	19,083	4.4%	1,658	12.3%	17,425	4.2%
Obesity	68,006	15.8%	4,880	36.1%	63,126	15.1%
Pulmonary Conditions	11,076	2.6%	1,303	9.6%	9,773	2.3%
Sickle Cell Disease	505	0.1%	79	0.6%	426	0.1%
Smoking	28,888	6.7%	2,376	17.6%	26,512	6.3%
Solid Organ or Stem Cell Transplant	320	0.1%	47	0.3%	273	0.1%
Solid Organ Transplant	291	0.1%	44	0.3%	247	0.1%
Vascular Disease	108,324	25.1%	7,668	56.7%	100,656	24.1%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	3,906	0.9%	402	3.0%	3,504	0.8%
Glucocorticoids Inhaled	17,265	4.0%	1,294	9.6%	15,971	3.8%
Glucocorticoids NonSystemic	37,391	8.7%	2,191	16.2%	35,200	8.4%
Glucocorticoids Ophthalmic	2,490	0.6%	161	1.2%	2,329	0.6%
Glucocorticoids Systemic	81,203	18.8%	4,845	35.8%	76,358	18.3%

**Table 1ae. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Topical	19,619	4.6%	904	6.7%	18,715	4.5%
Immune Modulators	8,573	2.0%	851	6.3%	7,722	1.8%
Immunosuppressants	6,174	1.4%	563	4.2%	5,611	1.3%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	17,286	4.0%	1,088	8.0%	16,198	3.9%
Angiotensin receptor blockers (ARBs)	14,727	3.4%	972	7.2%	13,755	3.3%
Vasopressors	529	0.1%	32	0.2%	497	0.1%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.5	1.7	2.6	0.5	1.4
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	78,627	18.2%	4,741	35.0%	73,886	17.7%
Diarrhea	11,186	2.6%	1,592	11.8%	9,594	2.3%
Dyspnea/Short of Breath	53,213	12.3%	9,513	70.3%	43,700	10.5%
Fever	45,116	10.5%	3,965	29.3%	41,151	9.9%
Headache	6,019	1.4%	307	2.3%	5,712	1.4%
Malaise or Fatigue	29,045	6.7%	2,690	19.9%	26,355	6.3%
Multisystem Inflammatory Syndrome	51	0.0%	14	0.1%	37	0.0%
Myalgia	12,720	3.0%	639	4.7%	12,081	2.9%
Nasal Congestion	13,218	3.1%	224	1.7%	12,994	3.1%
Nausea or Vomiting	14,693	3.4%	1,860	13.7%	12,833	3.1%
Smell or Taste Disturbance	11,908	2.8%	274	2.0%	11,634	2.8%
Sore Throat	19,968	4.6%	355	2.6%	19,613	4.7%

**Table 1ae. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	6.3	9.6	11.1	14.1	6.1	9.3
Mean number of emergency room encounters	0.3	1.4	1.1	3.0	0.3	1.3
Mean number of inpatient hospital encounters	0.1	0.3	0.2	0.8	0.0	0.3
Mean number of non-acute institutional encounters	0.0	0.2	0.1	0.4	0.0	0.2
Mean number of other ambulatory encounters	0.9	4.2	2.7	7.9	0.9	4.0
Mean number of filled prescriptions	8.6	13.2	19.1	19.8	8.3	12.8
Mean number of generics dispensed	3.8	4.6	7.9	6.3	3.7	4.5
Mean number of unique drug classes dispensed	3.6	4.2	7.3	5.7	3.4	4.1
<b>COVID Diagnosis (-7, 7)</b>						
COVID Positive Diagnosis	338,412	78.5%	13,249	97.9%	325,163	77.9%

**Table 1ae. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Non-Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	54	0.0%	0	0.0%	54	0.0%
Intensive Care	8,757	2.0%	167	1.2%	8,590	2.1%
Mechanical Ventilation	2,956	0.7%	33	0.2%	2,923	0.7%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	627	0.1%	11	0.1%	616	0.1%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)



**Table 1af. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	29,267	N/A	16,027	N/A	13,240	N/A
<b>Demographic Characteristics</b>						
Age (years)	53.1	10.6	54.4	9.6	51.5	11.6
Age						
0-5 years	70	0.2%	27	0.2%	43	0.3%
6-11 years	41	0.1%	15	0.1%	26	0.2%
12-18 years	169	0.6%	59	0.4%	110	0.8%
19-29 years	1,162	4.0%	408	2.5%	754	5.7%
30-39 years	2,502	8.5%	1,033	6.4%	1,469	11.1%
40-49 years	4,643	15.9%	2,468	15.4%	2,175	16.4%
50-64 years	20,680	70.7%	12,017	75.0%	8,663	65.4%
65-74 years						
≥ 75 years	13,963	47.7%	7,007	43.7%	6,956	52.5%
Sex	15,304	52.3%	9,020	56.3%	6,284	47.5%
Female						
Male	158	0.5%	87	0.5%	71	0.5%
Race <sup>2</sup>	534	1.8%	276	1.7%	258	1.9%
American Indian or Alaska Native	5,285	18.1%	3,052	19.0%	2,233	16.9%
Asian	134	0.5%	77	0.5%	57	0.4%
Black or African American	12,280	42.0%	6,455	40.3%	5,825	44.0%
Native Hawaiian or Other Pacific Islander	10,876	37.2%	6,080	37.9%	4,796	36.2%
Unknown						
White	2,504	8.6%	1,370	8.5%	1,134	8.6%

**Table 1af. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	11,050	37.8%	6,486	40.5%	4,564	34.5%
Yes	15,713	53.7%	8,171	51.0%	7,542	57.0%
No						
Unknown	1,515	5.2%	876	5.5%	639	4.8%
May 2020	914	3.1%	526	3.3%	388	2.9%
June 2020	1,144	3.9%	709	4.4%	435	3.3%
July 2020	2,816	9.6%	1,684	10.5%	1,132	8.5%
August 2020	1,715	5.9%	974	6.1%	741	5.6%
September 2020	1,172	4.0%	661	4.1%	511	3.9%
October 2020	1,963	6.7%	1,085	6.8%	878	6.6%
November 2020	4,091	14.0%	2,165	13.5%	1,926	14.5%
December 2020	5,126	17.5%	2,733	17.1%	2,393	18.1%
January 2021	4,718	16.1%	2,491	15.5%	2,227	16.8%
February 2021	2,245	7.7%	1,191	7.4%	1,054	8.0%
March 2021	1,848	6.3%	932	5.8%	916	6.9%
Census Bureau (CB) Region						
Midwest	4,882	16.7%	2,621	16.4%	2,261	17.1%
Northeast	2,500	8.5%	1,118	7.0%	1,382	10.4%
South	17,089	58.4%	9,630	60.1%	7,459	56.3%
West	4,796	16.4%	2,658	16.6%	2,138	16.1%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%

**Table 1af. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Urbanicity</b>						
Urban (population >= 50,000)	19,871	67.9%	11,031	68.8%	8,840	66.8%
Suburban (population 2,500 - 49,999)	338	1.2%	202	1.3%	136	1.0%
Rural (population < 2,500)	9,058	30.9%	4,794	29.9%	4,264	32.2%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	0	0.0%
<b>Proxies for Socioeconomic Status (SES)</b>						
Average Median Household Income <sup>3</sup>	61,097.5	23,005.3	59,663.8	21,813.0	62,833.0	24,280.4
Average Median Home Value <sup>3</sup>	215,689.6	146,773.0	206,579.4	132,861.5	226,717.5	161,435.0
Average Percent Unemployment <sup>3</sup>	5.9	3.0	6.0	3.0	5.8	3.0
<b>Missingness in Proxies for Socioeconomic Status (SES)</b>						
Median Household Income Available	29,267	100.0%	16,027	100.0%	13,240	100.0%
Median Home Value Available	29,267	100.0%	16,027	100.0%	13,240	100.0%
Percent Unemployment Available	29,267	100.0%	16,027	100.0%	13,240	100.0%
All SES Indicators Available	29,267	100.0%	16,027	100.0%	13,240	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	260	0.9%	160	1.0%	100	0.8%
Adult BMI 20-29	2,033	6.9%	1,185	7.4%	848	6.4%
Adult BMI 30-39	4,736	16.2%	2,681	16.7%	2,055	15.5%
Adult BMI 40 or greater	4,277	14.6%	2,542	15.9%	1,735	13.1%
Alcohol or Drug Abuse	1,970	6.7%	1,177	7.3%	793	6.0%
Alcohol Use Abuse	1,098	3.8%	677	4.2%	421	3.2%
Any Cancer	2,149	7.3%	1,217	7.6%	932	7.0%
Asthma	3,787	12.9%	2,043	12.7%	1,744	13.2%
Autoimmune Conditions	1,681	5.7%	951	5.9%	730	5.5%

**Table 1af. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Blood Stem Cell Transplant	5	0.0%	2	0.0%	3	0.0%
Chronic Kidney Disease	6,252	21.4%	4,042	25.2%	2,210	16.7%
Congestive Heart Failure	4,242	14.5%	2,874	17.9%	1,368	10.3%
Chronic Obstructive Pulmonary Disease (COPD)	4,949	16.9%	3,088	19.3%	1,861	14.1%
Coronary Artery Disease	5,850	20.0%	3,788	23.6%	2,062	15.6%
Cystic Fibrosis	15	0.1%	5	0.0%	10	0.1%
Diabetes Mellitus	11,861	40.5%	7,219	45.0%	4,642	35.1%
Drug Abuse Dependence	1,150	3.9%	657	4.1%	493	3.7%
HIV	261	0.9%	141	0.9%	120	0.9%
Hypertension	17,068	58.3%	10,124	63.2%	6,944	52.4%
Interstitial Lung Disease	588	2.0%	404	2.5%	184	1.4%
Liver Disease	2,824	9.6%	1,658	10.3%	1,166	8.8%
Neurologic Conditions	3,947	13.5%	2,311	14.4%	1,636	12.4%
Obesity	11,486	39.2%	6,551	40.9%	4,935	37.3%
Pulmonary Conditions	7,013	24.0%	4,178	26.1%	2,835	21.4%
Sickle Cell Disease	172	0.6%	91	0.6%	81	0.6%
Smoking	6,098	20.8%	3,584	22.4%	2,514	19.0%
Solid Organ or Stem Cell Transplant	116	0.4%	73	0.5%	43	0.3%
Solid Organ Transplant	111	0.4%	71	0.4%	40	0.3%
Vascular Disease	18,720	64.0%	11,022	68.8%	7,698	58.1%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	922	3.2%	536	3.3%	386	2.9%
Glucocorticoids Inhaled	3,356	11.5%	1,991	12.4%	1,365	10.3%
Glucocorticoids NonSystemic	5,265	18.0%	3,044	19.0%	2,221	16.8%

**Table 1af. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Ophthalmic	366	1.3%	218	1.4%	148	1.1%
Glucocorticoids Systemic	12,479	42.6%	6,983	43.6%	5,496	41.5%
Glucocorticoids Topical	1,981	6.8%	1,105	6.9%	876	6.6%
Immune Modulators	1,924	6.6%	1,146	7.2%	778	5.9%
Immunosuppressants	1,298	4.4%	767	4.8%	531	4.0%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	2,422	8.3%	1,388	8.7%	1,034	7.8%
Angiotensin receptor blockers (ARBs)	2,173	7.4%	1,251	7.8%	922	7.0%
Vasopressors	407	1.4%	373	2.3%	34	0.3%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.2	2.9	2.5	3.2	1.8	2.6
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	7,495	25.6%	4,044	25.2%	3,451	26.1%
Diarrhea	2,970	10.1%	1,582	9.9%	1,388	10.5%
Dyspnea/Short of Breath	21,666	74.0%	12,672	79.1%	8,994	67.9%
Fever	7,198	24.6%	4,231	26.4%	2,967	22.4%
Headache	516	1.8%	289	1.8%	227	1.7%
Malaise or Fatigue	5,677	19.4%	3,352	20.9%	2,325	17.6%
Multisystem Inflammatory Syndrome	45	0.2%	27	0.2%	18	0.1%
Myalgia	701	2.4%	327	2.0%	374	2.8%
Nasal Congestion	185	0.6%	99	0.6%	86	0.6%
Nausea or Vomiting	3,415	11.7%	1,864	11.6%	1,551	11.7%
Smell or Taste Disturbance	350	1.2%	163	1.0%	187	1.4%
Sore Throat	342	1.2%	184	1.1%	158	1.2%

**Table 1af. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.1	18.0	14.4	20.8	11.5	13.6
Mean number of emergency room encounters	1.5	3.3	1.6	3.4	1.4	3.1
Mean number of inpatient hospital encounters	0.3	0.8	0.3	0.9	0.2	0.7
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.4	0.1	0.4
Mean number of other ambulatory encounters	3.4	9.2	3.8	9.9	2.8	8.1
Mean number of filled prescriptions	21.1	21.1	22.6	22.2	19.2	19.6
Mean number of generics dispensed	8.9	6.6	9.5	6.8	8.2	6.4
Mean number of unique drug classes dispensed	8.2	5.9	8.7	6.1	7.6	5.7
<b>COVID Diagnosis (-7, 7)</b>						
COVID Positive Diagnosis	29,267	100.0%	16,027	100.0%	13,240	100.0%

**Table 1af. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Critical COVID-19**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	118	0.4%	118	0.7%	0	0.0%
Intensive Care	14,961	51.1%	14,961	93.3%	0	0.0%
Mechanical Ventilation	4,722	16.1%	4,722	29.5%	0	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	914	3.1%	914	5.7%	0	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ag. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	29,267	N/A	1,903	N/A	27,364	N/A
<b>Demographic Characteristics</b>						
Age (years)	53.1	10.6	57.8	6.9	52.7	10.8
Age						
0-5 years	70	0.2%	1	0.1%	69	0.3%
6-11 years	41	0.1%	0	0.0%	41	0.1%
12-18 years	169	0.6%	1	0.1%	168	0.6%
19-29 years	1,162	4.0%	9	0.5%	1,153	4.2%
30-39 years	2,502	8.5%	45	2.4%	2,457	9.0%
40-49 years	4,643	15.9%	193	10.1%	4,450	16.3%
50-64 years	20,680	70.7%	1,654	86.9%	19,026	69.5%
65-74 years						
≥ 75 years	13,963	47.7%	774	40.7%	13,189	48.2%
Sex	15,304	52.3%	1,129	59.3%	14,175	51.8%
Female						
Male	158	0.5%	15	0.8%	143	0.5%
Race <sup>2</sup>	534	1.8%	29	1.5%	505	1.8%
American Indian or Alaska Native	5,285	18.1%	389	20.4%	4,896	17.9%
Asian	134	0.5%	14	0.7%	120	0.4%
Black or African American	12,280	42.0%	645	33.9%	11,635	42.5%
Native Hawaiian or Other Pacific Islander	10,876	37.2%	811	42.6%	10,065	36.8%
Unknown						
White	2,504	8.6%	154	8.1%	2,350	8.6%



**Table 1ag. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Hispanic origin	11,050	37.8%	983	51.7%	10,067	36.8%
Yes	15,713	53.7%	766	40.3%	14,947	54.6%
No						
Unknown	1,515	5.2%	123	6.5%	1,392	5.1%
May 2020	914	3.1%	53	2.8%	861	3.1%
June 2020	1,144	3.9%	56	2.9%	1,088	4.0%
July 2020	2,816	9.6%	186	9.8%	2,630	9.6%
August 2020	1,715	5.9%	104	5.5%	1,611	5.9%
September 2020	1,172	4.0%	67	3.5%	1,105	4.0%
October 2020	1,963	6.7%	137	7.2%	1,826	6.7%
November 2020	4,091	14.0%	271	14.2%	3,820	14.0%
December 2020	5,126	17.5%	388	20.4%	4,738	17.3%
January 2021	4,718	16.1%	330	17.3%	4,388	16.0%
February 2021	2,245	7.7%	142	7.5%	2,103	7.7%
March 2021	1,848	6.3%	46	2.4%	1,802	6.6%
Census Bureau (CB) Region						
Midwest	4,882	16.7%	296	15.6%	4,586	16.8%
Northeast	2,500	8.5%	145	7.6%	2,355	8.6%
South	17,089	58.4%	1,161	61.0%	15,928	58.2%
West	4,796	16.4%	301	15.8%	4,495	16.4%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%
Urbanicity						

**Table 1ag. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Urban (population >= 50,000)	19,871	67.9%	1,175	61.7%	18,696	68.3%
Suburban (population 2,500 - 49,999)	338	1.2%	25	1.3%	313	1.1%
Rural (population < 2,500)	9,058	30.9%	703	36.9%	8,355	30.5%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	0	0.0%
Proxies for Socioeconomic Status (SES)						
Average Median Household Income <sup>3</sup>	61,097.5	23,005.3	55,504.0	20,009.9	61,486.5	23,172.5
Average Median Home Value <sup>3</sup>	215,689.6	146,773.0	187,157.4	123,782.0	217,673.8	148,177.6
Average Percent Unemployment <sup>3</sup>	5.9	3.0	6.3	3.5	5.9	3.0
Missingness in Proxies for Socioeconomic Status (SES)						
Median Household Income Available	29,267	100.0%	1,903	100.0%	27,364	100.0%
Median Home Value Available	29,267	100.0%	1,903	100.0%	27,364	100.0%
Percent Unemployment Available	29,267	100.0%	1,903	100.0%	27,364	100.0%
All SES Indicators Available	29,267	100.0%	1,903	100.0%	27,364	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	260	0.9%	24	1.3%	236	0.9%
Adult BMI 20-29	2,033	6.9%	152	8.0%	1,881	6.9%
Adult BMI 30-39	4,736	16.2%	368	19.3%	4,368	16.0%
Adult BMI 40 or greater	4,277	14.6%	372	19.5%	3,905	14.3%
Alcohol or Drug Abuse	1,970	6.7%	172	9.0%	1,798	6.6%
Alcohol Use Abuse	1,098	3.8%	122	6.4%	976	3.6%
Any Cancer	2,149	7.3%	223	11.7%	1,926	7.0%
Asthma	3,787	12.9%	247	13.0%	3,540	12.9%
Autoimmune Conditions	1,681	5.7%	151	7.9%	1,530	5.6%
Blood Stem Cell Transplant	5	0.0%	1	0.1%	4	0.0%

**Table 1ag. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Chronic Kidney Disease	6,252	21.4%	689	36.2%	5,563	20.3%
Congestive Heart Failure	4,242	14.5%	497	26.1%	3,745	13.7%
Chronic Obstructive Pulmonary Disease (COPD)	4,949	16.9%	507	26.6%	4,442	16.2%
Coronary Artery Disease	5,850	20.0%	607	31.9%	5,243	19.2%
Cystic Fibrosis	15	0.1%	1	0.1%	14	0.1%
Diabetes Mellitus	11,861	40.5%	1,065	56.0%	10,796	39.5%
Drug Abuse Dependence	1,150	3.9%	69	3.6%	1,081	4.0%
HIV	261	0.9%	21	1.1%	240	0.9%
Hypertension	17,068	58.3%	1,421	74.7%	15,647	57.2%
Interstitial Lung Disease	588	2.0%	88	4.6%	500	1.8%
Liver Disease	2,824	9.6%	279	14.7%	2,545	9.3%
Neurologic Conditions	3,947	13.5%	342	18.0%	3,605	13.2%
Obesity	11,486	39.2%	926	48.7%	10,560	38.6%
Pulmonary Conditions	7,013	24.0%	597	31.4%	6,416	23.4%
Sickle Cell Disease	172	0.6%	10	0.5%	162	0.6%
Smoking	6,098	20.8%	545	28.6%	5,553	20.3%
Solid Organ or Stem Cell Transplant	116	0.4%	13	0.7%	103	0.4%
Solid Organ Transplant	111	0.4%	12	0.6%	99	0.4%
Vascular Disease	18,720	64.0%	1,516	79.7%	17,204	62.9%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	922	3.2%	104	5.5%	818	3.0%
Glucocorticoids Inhaled	3,356	11.5%	279	14.7%	3,077	11.2%
Glucocorticoids NonSystemic	5,265	18.0%	430	22.6%	4,835	17.7%
Glucocorticoids Ophthalmic	366	1.3%	27	1.4%	339	1.2%

**Table 1ag. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Systemic	12,479	42.6%	938	49.3%	11,541	42.2%
Glucocorticoids Topical	1,981	6.8%	163	8.6%	1,818	6.6%
Immune Modulators	1,924	6.6%	225	11.8%	1,699	6.2%
Immunosuppressants	1,298	4.4%	131	6.9%	1,167	4.3%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	2,422	8.3%	199	10.5%	2,223	8.1%
Angiotensin receptor blockers (ARBs)	2,173	7.4%	151	7.9%	2,022	7.4%
Vasopressors	407	1.4%	158	8.3%	249	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.2	2.9	3.5	3.7	2.1	2.9
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	7,495	25.6%	395	20.8%	7,100	25.9%
Diarrhea	2,970	10.1%	151	7.9%	2,819	10.3%
Dyspnea/Short of Breath	21,666	74.0%	1,618	85.0%	20,048	73.3%
Fever	7,198	24.6%	461	24.2%	6,737	24.6%
Headache	516	1.8%	18	0.9%	498	1.8%
Malaise or Fatigue	5,677	19.4%	358	18.8%	5,319	19.4%
Multisystem Inflammatory Syndrome	45	0.2%	2	0.1%	43	0.2%
Myalgia	701	2.4%	18	0.9%	683	2.5%
Nasal Congestion	185	0.6%	14	0.7%	171	0.6%
Nausea or Vomiting	3,415	11.7%	145	7.6%	3,270	12.0%
Smell or Taste Disturbance	350	1.2%	4	0.2%	346	1.3%
Sore Throat	342	1.2%	16	0.8%	326	1.2%

**Table 1ag. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.1	18.0	17.9	23.3	12.8	17.5
Mean number of emergency room encounters	1.5	3.3	1.7	3.3	1.5	3.3
Mean number of inpatient hospital encounters	0.3	0.8	0.5	1.1	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.5	0.1	0.4
Mean number of other ambulatory encounters	3.4	9.2	5.2	10.6	3.2	9.0
Mean number of filled prescriptions	21.1	21.1	27.9	23.6	20.6	20.9
Mean number of generics dispensed	8.9	6.6	11.4	7.1	8.8	6.6
Mean number of unique drug classes dispensed	8.2	5.9	10.4	6.3	8.1	5.9
<b>COVID Diagnosis (-7, 7)</b>						
COVID Positive Diagnosis	29,267	100.0%	1,903	100.0%	27,364	100.0%

**Table 1ag. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Inpatient Death**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>						
Extracorporeal Membrane Oxygenation (ECMO)	118	0.4%	24	1.3%	94	0.3%
Intensive Care	14,961	51.1%	1,719	90.3%	13,242	48.4%
Mechanical Ventilation	4,722	16.1%	1,543	81.1%	3,179	11.6%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	914	3.1%	215	11.3%	699	2.6%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ah. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	29,267	N/A	1,923	N/A	27,344	N/A
<b>Demographic Characteristics</b>						
Age (years)	53.1	10.6	57.8	6.9	52.7	10.8
Age						
0-5 years	70	0.2%	1	0.1%	69	0.3%
6-11 years	41	0.1%	0	0.0%	41	0.1%
12-18 years	169	0.6%	1	0.1%	168	0.6%
19-29 years	1,162	4.0%	9	0.5%	1,153	4.2%
30-39 years	2,502	8.5%	45	2.3%	2,457	9.0%
40-49 years	4,643	15.9%	194	10.1%	4,449	16.3%
50-64 years	20,680	70.7%	1,673	87.0%	19,007	69.5%
Sex						
Female	13,963	47.7%	777	40.4%	13,186	48.2%
Male	15,304	52.3%	1,146	59.6%	14,158	51.8%
Race <sup>2</sup>						
American Indian or Alaska Native	158	0.5%	15	0.8%	143	0.5%
Asian	534	1.8%	29	1.5%	505	1.8%
Black or African American	5,285	18.1%	391	20.3%	4,894	17.9%
Native Hawaiian or Other Pacific Islander	134	0.5%	14	0.7%	120	0.4%
Unknown	12,280	42.0%	650	33.8%	11,630	42.5%
White	10,876	37.2%	824	42.8%	10,052	36.8%
Hispanic origin						
Yes	2,504	8.6%	155	8.1%	2,349	8.6%

**Table 1ah. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
No	11,050	37.8%	994	51.7%	10,056	36.8%
Unknown	15,713	53.7%	774	40.2%	14,939	54.6%
Month-Year of Cohort Entry						
April 2020	1,515	5.2%	124	6.4%	1,391	5.1%
May 2020	914	3.1%	54	2.8%	860	3.1%
June 2020	1,144	3.9%	56	2.9%	1,088	4.0%
July 2020	2,816	9.6%	186	9.7%	2,630	9.6%
August 2020	1,715	5.9%	105	5.5%	1,610	5.9%
September 2020	1,172	4.0%	69	3.6%	1,103	4.0%
October 2020	1,963	6.7%	138	7.2%	1,825	6.7%
November 2020	4,091	14.0%	278	14.5%	3,813	13.9%
December 2020	5,126	17.5%	392	20.4%	4,734	17.3%
January 2021	4,718	16.1%	333	17.3%	4,385	16.0%
February 2021	2,245	7.7%	142	7.4%	2,103	7.7%
March 2021	1,848	6.3%	46	2.4%	1,802	6.6%
Census Bureau (CB) Region						
Midwest	4,882	16.7%	299	15.5%	4,583	16.8%
Northeast	2,500	8.5%	149	7.7%	2,351	8.6%
South	17,089	58.4%	1,169	60.8%	15,920	58.2%
West	4,796	16.4%	306	15.9%	4,490	16.4%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%



**Table 1ah. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Urbanicity</b>						
Urban (population >= 50,000)	19,871	67.9%	1,185	61.6%	18,686	68.3%
Suburban (population 2,500 - 49,999)	338	1.2%	25	1.3%	313	1.1%
Rural (population < 2,500)	9,058	30.9%	713	37.1%	8,345	30.5%
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	0	0.0%
<b>Proxies for Socioeconomic Status (SES)</b>						
Average Median Household Income <sup>3</sup>	61,097.5	23,005.3	55,565.1	20,010.2	61,486.6	23,174.7
Average Median Home Value <sup>3</sup>	215,689.6	146,773.0	187,868.0	125,001.2	217,646.2	148,124.7
Average Percent Unemployment <sup>3</sup>	5.9	3.0	6.3	3.5	5.9	3.0
<b>Missingness in Proxies for Socioeconomic Status (SES)</b>						
Median Household Income Available	29,267	100.0%	1,923	100.0%	27,344	100.0%
Median Home Value Available	29,267	100.0%	1,923	100.0%	27,344	100.0%
Percent Unemployment Available	29,267	100.0%	1,923	100.0%	27,344	100.0%
All SES Indicators Available	29,267	100.0%	1,923	100.0%	27,344	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>						
Adult BMI 19.9 or less	260	0.9%	25	1.3%	235	0.9%
Adult BMI 20-29	2,033	6.9%	154	8.0%	1,879	6.9%
Adult BMI 30-39	4,736	16.2%	371	19.3%	4,365	16.0%
Adult BMI 40 or greater	4,277	14.6%	374	19.4%	3,903	14.3%
Alcohol or Drug Abuse	1,970	6.7%	177	9.2%	1,793	6.6%
Alcohol Use Abuse	1,098	3.8%	124	6.4%	974	3.6%
Any Cancer	2,149	7.3%	225	11.7%	1,924	7.0%

**Table 1ah. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Asthma	3,787	12.9%	249	12.9%	3,538	12.9%
Autoimmune Conditions	1,681	5.7%	151	7.9%	1,530	5.6%
Blood Stem Cell Transplant	5	0.0%	1	0.1%	4	0.0%
Chronic Kidney Disease	6,252	21.4%	696	36.2%	5,556	20.3%
Congestive Heart Failure	4,242	14.5%	505	26.3%	3,737	13.7%
Chronic Obstructive Pulmonary Disease (COPD)	4,949	16.9%	515	26.8%	4,434	16.2%
Coronary Artery Disease	5,850	20.0%	616	32.0%	5,234	19.1%
Cystic Fibrosis	15	0.1%	1	0.1%	14	0.1%
Diabetes Mellitus	11,861	40.5%	1,074	55.9%	10,787	39.4%
Drug Abuse Dependence	1,150	3.9%	72	3.7%	1,078	3.9%
HIV	261	0.9%	21	1.1%	240	0.9%
Hypertension	17,068	58.3%	1,436	74.7%	15,632	57.2%
Interstitial Lung Disease	588	2.0%	89	4.6%	499	1.8%
Liver Disease	2,824	9.6%	283	14.7%	2,541	9.3%
Neurologic Conditions	3,947	13.5%	347	18.0%	3,600	13.2%
Obesity	11,486	39.2%	931	48.4%	10,555	38.6%
Pulmonary Conditions	7,013	24.0%	604	31.4%	6,409	23.4%
Sickle Cell Disease	172	0.6%	10	0.5%	162	0.6%
Smoking	6,098	20.8%	554	28.8%	5,544	20.3%
Solid Organ or Stem Cell Transplant	116	0.4%	13	0.7%	103	0.4%
Solid Organ Transplant	111	0.4%	12	0.6%	99	0.4%
Vascular Disease	18,720	64.0%	1,533	79.7%	17,187	62.9%

**Table 1ah. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>						
Chemotherapy	922	3.2%	105	5.5%	817	3.0%
Glucocorticoids Inhaled	3,356	11.5%	281	14.6%	3,075	11.2%
Glucocorticoids NonSystemic	5,265	18.0%	434	22.6%	4,831	17.7%
Glucocorticoids Ophthalmic	366	1.3%	27	1.4%	339	1.2%
Glucocorticoids Systemic	12,479	42.6%	945	49.1%	11,534	42.2%
Glucocorticoids Topical	1,981	6.8%	165	8.6%	1,816	6.6%
Immune Modulators	1,924	6.6%	229	11.9%	1,695	6.2%
Immunosuppressants	1,298	4.4%	133	6.9%	1,165	4.3%
<b>Concurrent Use Of (-30, 0)</b>						
Angiotensin-converting enzyme (ACE) inhibitors	2,422	8.3%	200	10.4%	2,222	8.1%
Angiotensin receptor blockers (ARBs)	2,173	7.4%	152	7.9%	2,021	7.4%
Vasopressors	407	1.4%	158	8.2%	249	0.9%
<b>Comorbidity</b>						
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.2	2.9	3.6	3.7	2.1	2.9
<b>Symptoms at Diagnosis (-1, 14)</b>						
Cough	7,495	25.6%	403	21.0%	7,092	25.9%
Diarrhea	2,970	10.1%	151	7.9%	2,819	10.3%
Dyspnea/Short of Breath	21,666	74.0%	1,634	85.0%	20,032	73.3%
Fever	7,198	24.6%	464	24.1%	6,734	24.6%
Headache	516	1.8%	18	0.9%	498	1.8%
Malaise or Fatigue	5,677	19.4%	365	19.0%	5,312	19.4%
Multisystem Inflammatory Syndrome	45	0.2%	2	0.1%	43	0.2%

**Table 1ah. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Myalgia	701	2.4%	18	0.9%	683	2.5%
Nasal Congestion	185	0.6%	14	0.7%	171	0.6%
Nausea or Vomiting	3,415	11.7%	148	7.7%	3,267	11.9%
Smell or Taste Disturbance	350	1.2%	4	0.2%	346	1.3%
Sore Throat	342	1.2%	16	0.8%	326	1.2%
<b>Health Service Utilization Intensity</b>						
Mean number of ambulatory encounters	13.1	18.0	17.9	23.3	12.8	17.5
Mean number of emergency room encounters	1.5	3.3	1.8	3.3	1.5	3.3
Mean number of inpatient hospital encounters	0.3	0.8	0.5	1.1	0.3	0.8
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.6	0.1	0.4
Mean number of other ambulatory encounters	3.4	9.2	5.2	10.7	3.2	9.0
Mean number of filled prescriptions	21.1	21.1	27.9	23.8	20.6	20.9
Mean number of generics dispensed	8.9	6.6	11.4	7.1	8.8	6.6
Mean number of unique drug classes dispensed	8.2	5.9	10.4	6.3	8.1	5.9
<b>COVID Diagnosis (-7, 7)</b>						
COVID Positive Diagnosis	29,267	100.0%	1,923	100.0%	27,344	100.0%
<b>Critical COVID Criteria (0, 0)</b>						

**Table 1ah. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Death (Defined Using the Death Table or Encounter Table)**

Patient Characteristics	Overall		Evidence of outcome		No evidence of outcome	
	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>	Number/Mean	Percent/ Standard Deviation <sup>1</sup>
Extracorporeal Membrane Oxygenation (ECMO)	118	0.4%	24	1.2%	94	0.3%
Intensive Care	14,961	51.1%	1,729	89.9%	13,232	48.4%
Mechanical Ventilation	4,722	16.1%	1,548	80.5%	3,174	11.6%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	914	3.1%	217	11.3%	697	2.5%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1ai. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	431,049	N/A	321,162	N/A	3,472	N/A	106,412	N/A	3	N/A
<b>Demographic Characteristics</b>										
Age (years)	40.7	15.5	39.8	15.5	43.7	15.6	43.2	15.4	57.9	8.2
Age										
0-5 years	6,786	1.6%	5,487	1.7%	51	1.5%	1,248	1.2%	0	0.0%
6-11 years	10,352	2.4%	8,220	2.6%	70	2.0%	2,062	1.9%	0	0.0%
12-18 years	26,823	6.2%	20,492	6.4%	169	4.9%	6,162	5.8%	0	0.0%
19-29 years	77,963	18.1%	61,354	19.1%	522	15.0%	16,087	15.1%	0	0.0%
30-39 years	77,074	17.9%	60,834	18.9%	509	14.7%	15,731	14.8%	0	0.0%
40-49 years	80,476	18.7%	60,299	18.8%	607	17.5%	19,569	18.4%	1	33.3%
50-64 years	151,575	35.2%	104,476	32.5%	1,544	44.5%	45,553	42.8%	2	66.7%
Sex										
Female	230,341	53.4%	171,620	53.4%	1,904	54.8%	56,815	53.4%	2	66.7%
Male	200,708	46.6%	149,542	46.6%	1,568	45.2%	49,597	46.6%	1	33.3%
Race <sup>2</sup>										
American Indian or Alaska Native	1,647	0.4%	1,157	0.4%	11	0.3%	479	0.5%	0	0.0%
Asian	10,337	2.4%	9,625	3.0%	16	0.5%	696	0.7%	0	0.0%
Black or African American	29,781	6.9%	23,142	7.2%	357	10.3%	6,282	5.9%	0	0.0%
Islander	1,050	0.2%	852	0.3%	8	0.2%	190	0.2%	0	0.0%
Unknown	252,757	58.6%	193,308	60.2%	1,826	52.6%	57,621	54.1%	2	66.7%
White	135,477	31.4%	93,078	29.0%	1,254	36.1%	41,144	38.7%	1	33.3%
Hispanic origin										
Yes	37,821	8.8%	32,482	10.1%	140	4.0%	5,198	4.9%	1	33.3%
No	59,385	13.8%	36,189	11.3%	738	21.3%	22,457	21.1%	1	33.3%

**Table 1ai. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unknown	333,843	77.4%	252,491	78.6%	2,594	74.7%	78,757	74.0%	1	33.3%
Month-Year of Cohort Entry										
April 2020	10,761	2.5%	9,210	2.9%	91	2.6%	1,460	1.4%	0	0.0%
May 2020	9,901	2.3%	8,335	2.6%	56	1.6%	1,510	1.4%	0	0.0%
June 2020	19,500	4.5%	16,072	5.0%	114	3.3%	3,314	3.1%	0	0.0%
July 2020	36,946	8.6%	29,190	9.1%	310	8.9%	7,446	7.0%	0	0.0%
August 2020	21,871	5.1%	16,439	5.1%	194	5.6%	5,238	4.9%	0	0.0%
September 2020	20,046	4.7%	14,800	4.6%	158	4.6%	5,088	4.8%	0	0.0%
October 2020	32,783	7.6%	23,733	7.4%	254	7.3%	8,796	8.3%	0	0.0%
November 2020	67,533	15.7%	48,563	15.1%	574	16.5%	18,395	17.3%	1	33.3%
December 2020	85,652	19.9%	61,012	19.0%	769	22.1%	23,871	22.4%	0	0.0%
January 2021	70,305	16.3%	51,336	16.0%	603	17.4%	18,365	17.3%	1	33.3%
February 2021	29,939	6.9%	22,315	6.9%	196	5.6%	7,427	7.0%	1	33.3%
March 2021	25,812	6.0%	20,157	6.3%	153	4.4%	5,502	5.2%	0	0.0%
Census Bureau (CB) Region										
Midwest	65,461	15.2%	44,369	13.8%	461	13.3%	20,631	19.4%	0	0.0%
Northeast	53,661	12.4%	47,818	14.9%	253	7.3%	5,590	5.3%	0	0.0%
South	215,038	49.9%	148,016	46.1%	2,501	72.0%	64,521	60.6%	0	0.0%
West	96,889	22.5%	80,959	25.2%	257	7.4%	15,670	14.7%	3	100.0%
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Urbanicity										
Urban (population >= 50,000)	321,162	74.5%	321,162	100.0%	0	0.0%	0	0.0%	0	0.0%

**Table 1ai. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Suburban (population 2,500 - 49,999)	3,472	0.8%	0	0.0%	3,472	100.0%	0	0.0%	0	0.0%
Rural (population < 2,500)	106,412	24.7%	0	0.0%	0	0.0%	106,412	100.0%	0	0.0%
Zip Code Unknown or Urbanicity Not Available	3	0.0%	0	0.0%	0	0.0%	0	0.0%	3	100.0%
Proxies for Socioeconomic Status (SES)										
Average Median Household Income <sup>3</sup>	73,234.4	29,059.6	76,922.8	30,481.7	55,916.5	19,487.9	62,667.6	21,932.0	69,844.7	11,932.5
Average Median Home Value <sup>3</sup>	297,661.3	229,615.7	335,185.1	248,744.0	186,575.3	132,241.5	188,032.9	109,777.2	383,866.7	190,298.0
Average Percent Unemployment <sup>3</sup>	5.1	2.5	5.1	2.3	6.1	2.6	5.2	2.9	5.8	2.2
Missingness in Proxies for Socioeconomic Status (SES)										
Median Household Income Available	431,049	100.0%	321,162	100.0%	3,472	100.0%	106,412	100.0%	3	100.0%
Median Home Value Available	431,049	100.0%	321,162	100.0%	3,472	100.0%	106,412	100.0%	3	100.0%
Percent Unemployment Available	431,049	100.0%	321,162	100.0%	3,472	100.0%	106,412	100.0%	3	100.0%
All SES Indicators Available	431,049	100.0%	321,162	100.0%	3,472	100.0%	106,412	100.0%	3	100.0%
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	1,584	0.4%	1,129	0.4%	18	0.5%	437	0.4%	0	0.0%
Adult BMI 20-29	23,222	5.4%	17,133	5.3%	187	5.4%	5,901	5.5%	1	33.3%
Adult BMI 30-39	31,963	7.4%	21,510	6.7%	375	10.8%	10,078	9.5%	0	0.0%
Adult BMI 40 or greater	18,506	4.3%	11,540	3.6%	265	7.6%	6,700	6.3%	1	33.3%
Alcohol or Drug Abuse	9,589	2.2%	6,670	2.1%	119	3.4%	2,800	2.6%	0	0.0%
Alcohol Use Abuse	5,588	1.3%	4,030	1.3%	63	1.8%	1,495	1.4%	0	0.0%
Any Cancer	11,172	2.6%	7,767	2.4%	129	3.7%	3,275	3.1%	1	33.3%
Asthma	24,829	5.8%	17,937	5.6%	237	6.8%	6,655	6.3%	0	0.0%



**Table 1ai. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Autoimmune Conditions	8,710	2.0%	5,598	1.7%	118	3.4%	2,994	2.8%	0	0.0%
Blood Stem Cell Transplant	29	0.0%	22	0.0%	1	0.0%	6	0.0%	0	0.0%
Chronic Kidney Disease	19,402	4.5%	12,797	4.0%	246	7.1%	6,359	6.0%	0	0.0%
Congestive Heart Failure	10,416	2.4%	6,254	1.9%	135	3.9%	4,027	3.8%	0	0.0%
Chronic Obstructive Pulmonary Disease (COPD)	16,905	3.9%	9,666	3.0%	239	6.9%	7,000	6.6%	0	0.0%
Coronary Artery Disease	20,680	4.8%	12,848	4.0%	269	7.7%	7,563	7.1%	0	0.0%
Cystic Fibrosis	77	0.0%	59	0.0%	1	0.0%	17	0.0%	0	0.0%
Diabetes Mellitus	51,423	11.9%	33,623	10.5%	588	16.9%	17,212	16.2%	0	0.0%
Drug Abuse Dependence	5,137	1.2%	3,467	1.1%	76	2.2%	1,594	1.5%	0	0.0%
HIV	1,802	0.4%	1,580	0.5%	11	0.3%	211	0.2%	0	0.0%
Hypertension	93,665	21.7%	60,757	18.9%	1,127	32.5%	31,780	29.9%	1	33.3%
Interstitial Lung Disease	1,575	0.4%	991	0.3%	20	0.6%	564	0.5%	0	0.0%
Liver Disease	13,517	3.1%	9,305	2.9%	146	4.2%	4,066	3.8%	0	0.0%
Neurologic Conditions	19,083	4.4%	12,143	3.8%	233	6.7%	6,707	6.3%	0	0.0%
Obesity	68,006	15.8%	45,503	14.2%	791	22.8%	21,710	20.4%	2	66.7%
Pulmonary Conditions	11,076	2.6%	7,377	2.3%	128	3.7%	3,571	3.4%	0	0.0%
Sickle Cell Disease	505	0.1%	405	0.1%	5	0.1%	95	0.1%	0	0.0%
Smoking	28,888	6.7%	17,612	5.5%	403	11.6%	10,873	10.2%	0	0.0%
Solid Organ or Stem Cell Transplant	320	0.1%	234	0.1%	3	0.1%	83	0.1%	0	0.0%
Solid Organ Transplant	291	0.1%	212	0.1%	2	0.1%	77	0.1%	0	0.0%
Vascular Disease	108,324	25.1%	71,541	22.3%	1,243	35.8%	35,539	33.4%	1	33.3%
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	3,906	0.9%	2,538	0.8%	57	1.6%	1,311	1.2%	0	0.0%

**Table 1ai. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Glucocorticoids Inhaled	17,265	4.0%	11,844	3.7%	161	4.6%	5,260	4.9%	0	0.0%
Glucocorticoids NonSystemic	37,391	8.7%	26,768	8.3%	331	9.5%	10,292	9.7%	0	0.0%
Glucocorticoids Ophthalmic	2,490	0.6%	1,745	0.5%	29	0.8%	716	0.7%	0	0.0%
Glucocorticoids Systemic	81,203	18.8%	54,148	16.9%	862	24.8%	26,193	24.6%	0	0.0%
Glucocorticoids Topical	19,619	4.6%	14,508	4.5%	161	4.6%	4,950	4.7%	0	0.0%
Immune Modulators	8,573	2.0%	5,808	1.8%	90	2.6%	2,675	2.5%	0	0.0%
Immunosuppressants	6,174	1.4%	3,998	1.2%	78	2.2%	2,098	2.0%	0	0.0%
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	17,286	4.0%	11,043	3.4%	219	6.3%	6,024	5.7%	0	0.0%
Angiotensin receptor blockers (ARBs)	14,727	3.4%	10,075	3.1%	143	4.1%	4,509	4.2%	0	0.0%
Vasopressors	529	0.1%	342	0.1%	6	0.2%	181	0.2%	0	0.0%
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	0.5	1.5	0.5	1.4	0.7	1.8	0.7	1.7	-0.3	0.6
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	78,627	18.2%	55,149	17.2%	752	21.7%	22,725	21.4%	1	33.3%
Diarrhea	11,186	2.6%	7,610	2.4%	119	3.4%	3,457	3.2%	0	0.0%
Dyspnea/Short of Breath	53,213	12.3%	36,355	11.3%	574	16.5%	16,283	15.3%	1	33.3%
Fever	45,116	10.5%	31,820	9.9%	418	12.0%	12,877	12.1%	1	33.3%
Headache	6,019	1.4%	4,520	1.4%	62	1.8%	1,437	1.4%	0	0.0%
Malaise or Fatigue	29,045	6.7%	20,423	6.4%	263	7.6%	8,358	7.9%	1	33.3%
Multisystem Inflammatory Syndrome	51	0.0%	38	0.0%	1	0.0%	12	0.0%	0	0.0%

**Table 1ai. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Myalgia	12,720	3.0%	9,343	2.9%	94	2.7%	3,283	3.1%	0	0.0%
Nasal Congestion	13,218	3.1%	9,040	2.8%	112	3.2%	4,066	3.8%	0	0.0%
Nausea or Vomiting	14,693	3.4%	9,654	3.0%	169	4.9%	4,870	4.6%	0	0.0%
Smell or Taste Disturbance	11,908	2.8%	8,182	2.5%	120	3.5%	3,606	3.4%	0	0.0%
Sore Throat	19,968	4.6%	14,406	4.5%	163	4.7%	5,399	5.1%	0	0.0%
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory encounters	6.3	9.6	6.1	9.3	7.4	10.1	6.9	10.1	7.3	3.8
Mean number of emergency room encounters	0.3	1.4	0.3	1.3	0.5	1.7	0.4	1.6	0.0	NaN
Mean number of inpatient hospital encounters	0.1	0.3	0.0	0.3	0.1	0.4	0.1	0.4	0.0	NaN
Mean number of non-acute institutional encounters	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	NaN
Mean number of other ambulatory encounters	0.9	4.2	0.9	4.0	1.2	4.5	1.1	4.7	1.0	1.7
Mean number of filled prescriptions	8.6	13.2	7.5	11.9	12.6	16.9	11.7	16.0	8.7	11.6
Mean number of generics dispensed	3.8	4.6	3.4	4.3	5.2	5.6	4.9	5.3	4.3	4.9
Mean number of unique drug classes dispensed	3.6	4.2	3.2	3.9	4.9	5.0	4.6	4.8	4.0	4.4
<b>COVID Diagnosis (-7, 7)</b>										
COVID Positive Diagnosis	338,412	78.5%	247,251	77.0%	2,899	83.5%	88,260	82.9%	2	66.7%

**Table 1ai. Aggregated Characteristics of COVID-19 (PCR Positive for SARS COV-2 or U07.1 Diagnosis Code in Any Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	54	0.0%	47	0.0%	0	0.0%	7	0.0%	0	0.0%
Intensive Care	8,757	2.0%	6,160	1.9%	112	3.2%	2,485	2.3%	0	0.0%
Mechanical Ventilation	2,956	0.7%	1,979	0.6%	37	1.1%	940	0.9%	0	0.0%
Renal Replacement Therapy and Acute Renal Failure Diagnosis	627	0.1%	437	0.1%	3	0.1%	187	0.2%	0	0.0%

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 1aj. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Unique patients	29,267	N/A	19,871	N/A	338	N/A	9,058	N/A	0	N/A
<b>Demographic Characteristics</b>										
Age (years)	53.1	10.6	52.3	11.0	53.6	11.2	54.8	9.6	.	.
Age										
0-5 years	70	0.2%	55	0.3%	2	0.6%	13	0.1%	.	.
6-11 years	41	0.1%	29	0.1%	1	0.3%	11	0.1%	.	.
12-18 years	169	0.6%	131	0.7%	1	0.3%	37	0.4%	.	.
19-29 years	1,162	4.0%	890	4.5%	14	4.1%	258	2.8%	.	.
30-39 years	2,502	8.5%	1,950	9.8%	22	6.5%	530	5.9%	.	.
40-49 years	4,643	15.9%	3,355	16.9%	54	16.0%	1,234	13.6%	.	.
50-64 years	20,680	70.7%	13,461	67.7%	244	72.2%	6,975	77.0%	.	.
Sex										
Female	13,963	47.7%	9,436	47.5%	170	50.3%	4,357	48.1%	.	.
Male	15,304	52.3%	10,435	52.5%	168	49.7%	4,701	51.9%	.	.
Race <sup>2</sup>										
American Indian or Alaska Native	158	0.5%	95	0.5%	2	0.6%	61	0.7%	.	.
Asian	534	1.8%	494	2.5%	2	0.6%	38	0.4%	.	.
Black or African American	5,285	18.1%	3,798	19.1%	72	21.3%	1,415	15.6%	.	.
Islander	134	0.5%	111	0.6%	2	0.6%	21	0.2%	.	.
Unknown	12,280	42.0%	9,285	46.7%	114	33.7%	2,881	31.8%	.	.
White	10,876	37.2%	6,088	30.6%	146	43.2%	4,642	51.2%	.	.
Hispanic origin										
Yes	2,504	8.6%	2,131	10.7%	15	4.4%	358	4.0%	.	.

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Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
No	11,050	37.8%	6,219	31.3%	152	45.0%	4,679	51.7%	.	.
Unknown	15,713	53.7%	11,521	58.0%	171	50.6%	4,021	44.4%	.	.
Month-Year of Cohort Entry										
April 2020	1,515	5.2%	1,271	6.4%	17	5.0%	227	2.5%	.	.
May 2020	914	3.1%	724	3.6%	9	2.7%	181	2.0%	.	.
June 2020	1,144	3.9%	891	4.5%	11	3.3%	242	2.7%	.	.
July 2020	2,816	9.6%	2,064	10.4%	34	10.1%	718	7.9%	.	.
August 2020	1,715	5.9%	1,141	5.7%	25	7.4%	549	6.1%	.	.
September 2020	1,172	4.0%	706	3.6%	10	3.0%	456	5.0%	.	.
October 2020	1,963	6.7%	1,213	6.1%	36	10.7%	714	7.9%	.	.
November 2020	4,091	14.0%	2,697	13.6%	48	14.2%	1,346	14.9%	.	.
December 2020	5,126	17.5%	3,271	16.5%	64	18.9%	1,791	19.8%	.	.
January 2021	4,718	16.1%	3,078	15.5%	47	13.9%	1,593	17.6%	.	.
February 2021	2,245	7.7%	1,493	7.5%	24	7.1%	728	8.0%	.	.
March 2021	1,848	6.3%	1,322	6.7%	13	3.8%	513	5.7%	.	.
Census Bureau (CB) Region										
Midwest	4,882	16.7%	3,214	16.2%	41	12.1%	1,627	18.0%	.	.
Northeast	2,500	8.5%	2,150	10.8%	17	5.0%	333	3.7%	.	.
South	17,089	58.4%	10,609	53.4%	262	77.5%	6,218	68.6%	.	.
West	4,796	16.4%	3,898	19.6%	18	5.3%	880	9.7%	.	.
CB Region (Invalid)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	.	.
CB Region (Missing)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	.	.
CB Region (Other)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	.	.

**Table 1aj. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Urbanicity</b>										
Urban (population >= 50,000)	19,871	67.9%	19,871	100.0%	0	0.0%	0	0.0%	.	.
Suburban (population 2,500 - 49,999)	338	1.2%	0	0.0%	338	100.0%	0	0.0%	.	.
Rural (population < 2,500)	9,058	30.9%	0	0.0%	0	0.0%	9,058	100.0%	.	.
Zip Code Unknown or Urbanicity Not Available	0	0.0%	0	0.0%	0	0.0%	0	0.0%	.	.
<b>(SES)</b>										
Income <sup>3</sup>	61,097.5	23,005.3	64,117.2	24,843.2	51,054.3	17,653.8	54,847.9	17,549.0	.	.
Average Median Home Value <sup>3</sup>	215,689.6	146,773.0	244,830.6	164,360.0	156,519.5	97,820.0	153,969.4	75,882.6	.	.
Average Percent Unemployment <sup>3</sup>	5.9	3.0	6.0	2.9	6.4	2.5	5.8	3.3	.	.
<b>Missingness in Proxies for Socioeconomic Status (SES)</b>										
<b>Median Household Income</b>										
Available	29,267	100.0%	19,871	100.0%	338	100.0%	9,058	100.0%	.	.
Median Home Value Available	29,267	100.0%	19,871	100.0%	338	100.0%	9,058	100.0%	.	.
Percent Unemployment Available	29,267	100.0%	19,871	100.0%	338	100.0%	9,058	100.0%	.	.
All SES Indicators Available	29,267	100.0%	19,871	100.0%	338	100.0%	9,058	100.0%	.	.
<b>Recorded History Of Prior to Index Event (-183, -1)</b>										
Adult BMI 19.9 or less	260	0.9%	170	0.9%	3	0.9%	87	1.0%	.	.
Adult BMI 20-29	2,033	6.9%	1,355	6.8%	22	6.5%	656	7.2%	.	.
Adult BMI 30-39	4,736	16.2%	3,064	15.4%	57	16.9%	1,615	17.8%	.	.
Adult BMI 40 or greater	4,277	14.6%	2,669	13.4%	62	18.3%	1,546	17.1%	.	.

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Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Alcohol or Drug Abuse	1,970	6.7%	1,301	6.5%	32	9.5%	637	7.0%	.	.
Alcohol Use Abuse	1,098	3.8%	753	3.8%	18	5.3%	327	3.6%	.	.
Any Cancer	2,149	7.3%	1,397	7.0%	22	6.5%	730	8.1%	.	.
Asthma	3,787	12.9%	2,546	12.8%	38	11.2%	1,203	13.3%	.	.
Autoimmune Conditions	1,681	5.7%	1,040	5.2%	34	10.1%	607	6.7%	.	.
Blood Stem Cell Transplant	5	0.0%	3	0.0%	0	0.0%	2	0.0%	.	.
Chronic Kidney Disease	6,252	21.4%	4,056	20.4%	92	27.2%	2,104	23.2%	.	.
Congestive Heart Failure	4,242	14.5%	2,573	12.9%	53	15.7%	1,616	17.8%	.	.
Chronic Obstructive Pulmonary Disease (COPD)	4,949	16.9%	2,855	14.4%	69	20.4%	2,025	22.4%	.	.
Coronary Artery Disease	5,850	20.0%	3,627	18.3%	84	24.9%	2,139	23.6%	.	.
Cystic Fibrosis	15	0.1%	11	0.1%	0	0.0%	4	0.0%	.	.
Diabetes Mellitus	11,861	40.5%	7,549	38.0%	157	46.4%	4,155	45.9%	.	.
Drug Abuse Dependence	1,150	3.9%	756	3.8%	18	5.3%	376	4.2%	.	.
HIV	261	0.9%	225	1.1%	2	0.6%	34	0.4%	.	.
Hypertension	17,068	58.3%	10,823	54.5%	219	64.8%	6,026	66.5%	.	.
Interstitial Lung Disease	588	2.0%	366	1.8%	6	1.8%	216	2.4%	.	.
Liver Disease	2,824	9.6%	1,848	9.3%	41	12.1%	935	10.3%	.	.
Neurologic Conditions	3,947	13.5%	2,479	12.5%	47	13.9%	1,421	15.7%	.	.
Obesity	11,486	39.2%	7,395	37.2%	145	42.9%	3,946	43.6%	.	.
Pulmonary Conditions	7,013	24.0%	4,628	23.3%	82	24.3%	2,303	25.4%	.	.
Sickle Cell Disease	172	0.6%	132	0.7%	3	0.9%	37	0.4%	.	.
Smoking	6,098	20.8%	3,636	18.3%	96	28.4%	2,366	26.1%	.	.



**Table 1aj. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Solid Organ or Stem Cell Transplant	116	0.4%	83	0.4%	2	0.6%	31	0.3%	.	.
Solid Organ Transplant	111	0.4%	80	0.4%	2	0.6%	29	0.3%	.	.
Vascular Disease	18,720	64.0%	11,945	60.1%	241	71.3%	6,534	72.1%	.	.
<b>Recorded Use Of Prior to Index Event (-183, -1)</b>										
Chemotherapy	922	3.2%	586	2.9%	12	3.6%	324	3.6%	.	.
Glucocorticoids Inhaled	3,356	11.5%	2,123	10.7%	45	13.3%	1,188	13.1%	.	.
Glucocorticoids NonSystemic	5,265	18.0%	3,393	17.1%	69	20.4%	1,803	19.9%	.	.
Glucocorticoids Ophthalmic	366	1.3%	237	1.2%	8	2.4%	121	1.3%	.	.
Glucocorticoids Systemic	12,479	42.6%	7,801	39.3%	162	47.9%	4,516	49.9%	.	.
Glucocorticoids Topical	1,981	6.8%	1,315	6.6%	22	6.5%	644	7.1%	.	.
Immune Modulators	1,924	6.6%	1,298	6.5%	21	6.2%	605	6.7%	.	.
Immunosuppressants	1,298	4.4%	842	4.2%	21	6.2%	435	4.8%	.	.
<b>Concurrent Use Of (-30, 0)</b>										
Angiotensin-converting enzyme (ACE) inhibitors	2,422	8.3%	1,499	7.5%	36	10.7%	887	9.8%	.	.
Angiotensin receptor blockers (ARBs)	2,173	7.4%	1,400	7.0%	30	8.9%	743	8.2%	.	.
Vasopressors	407	1.4%	264	1.3%	7	2.1%	136	1.5%	.	.
<b>Comorbidity</b>										
Charlson/Elixhauser combined comorbidity score <sup>5</sup>	2.2	2.9	2.0	2.9	2.3	3.0	2.4	3.0	.	.

**Table 1aj. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Symptoms at Diagnosis (-1, 14)</b>										
Cough	7,495	25.6%	5,235	26.3%	81	24.0%	2,179	24.1%	.	.
Diarrhea	2,970	10.1%	2,040	10.3%	30	8.9%	900	9.9%	.	.
Dyspnea/Short of Breath	21,666	74.0%	14,566	73.3%	254	75.1%	6,846	75.6%	.	.
Fever	7,198	24.6%	5,139	25.9%	76	22.5%	1,983	21.9%	.	.
Headache	516	1.8%	366	1.8%	7	2.1%	143	1.6%	.	.
Malaise or Fatigue	5,677	19.4%	3,685	18.5%	73	21.6%	1,919	21.2%	.	.
Multisystem Inflammatory Syndrome	45	0.2%	34	0.2%	1	0.3%	10	0.1%	.	.
Myalgia	701	2.4%	487	2.5%	6	1.8%	208	2.3%	.	.
Nasal Congestion	185	0.6%	127	0.6%	1	0.3%	57	0.6%	.	.
Nausea or Vomiting	3,415	11.7%	2,255	11.3%	37	10.9%	1,123	12.4%	.	.
Smell or Taste Disturbance	350	1.2%	245	1.2%	8	2.4%	97	1.1%	.	.
Sore Throat	342	1.2%	241	1.2%	5	1.5%	96	1.1%	.	.
<b>Health Service Utilization Intensity</b>										
Mean number of ambulatory encounters	13.1	18.0	12.6	17.7	13.6	15.7	14.1	18.7	.	.
Mean number of emergency room encounters	1.5	3.3	1.4	3.2	1.6	2.6	1.7	3.4	.	.
Mean number of inpatient hospital encounters	0.3	0.8	0.3	0.8	0.3	0.8	0.3	0.9	.	.
Mean number of non-acute institutional encounters	0.1	0.4	0.1	0.4	0.1	0.4	0.1	0.4	.	.
Mean number of other ambulatory encounters	3.4	9.2	3.2	8.8	3.5	7.7	3.8	9.9	.	.

**Table 1aj. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
Mean number of filled prescriptions	21.1	21.1	18.9	20.1	24.3	20.3	25.7	22.9	.	.
Mean number of generics dispensed	8.9	6.6	8.2	6.4	10.3	7.1	10.6	6.9	.	.
Mean number of unique drug classes dispensed	8.2	5.9	7.5	5.8	9.5	6.3	9.7	6.2	.	.
<b>COVID Diagnosis (-7, 7)</b>										
COVID Positive Diagnosis	29,267	100.0%	19,871	100.0%	338	100.0%	9,058	100.0%	.	.

**Table 1aj. Aggregated Characteristics of COVID-19 Hospitalization (U07.1 Diagnosis Code in the Inpatient Care Setting) Among Those Less Than 65 Years of Age, with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021, Overall and by Urbanicity**

Patient Characteristics	Overall		Urban		Suburban		Rural		Unknown Urbanicity	
	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>	Number/ Mean	Percent/ Standard Deviation <sup>1</sup>
<b>Critical COVID Criteria (0, 0)</b>										
Extracorporeal Membrane Oxygenation (ECMO)	118	0.4%	102	0.5%	1	0.3%	15	0.2%	.	.
Intensive Care	14,961	51.1%	10,427	52.5%	188	55.6%	4,346	48.0%	.	.
Mechanical Ventilation	4,722	16.1%	3,066	15.4%	64	18.9%	1,592	17.6%	.	.
Renal Replacement Therapy and Acute Renal Failure Diagnosis	914	3.1%	621	3.1%	10	3.0%	283	3.1%	.	.

<sup>1</sup>Value represents standard deviation where no % follows the value.

<sup>2</sup>Race data may not be completely populated at all Data Partners; therefore, data about race may be incomplete.

<sup>3</sup>These variables were calculated only among those with a known SES information.

<sup>4</sup>Gestational age estimated using a claims-based algorithm, previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP), to identify pregnancies ending in a live birth. ICD-10-CM diagnosis codes indicative of weeks of gestation, and ICD-9-CM and ICD-10-CM diagnosis codes for pre-term and post-term deliveries, were used to calculate the length of the pregnancy episode. Codes had to occur within 7 days of a delivery date in the inpatient setting. In absence of pre-/post-term codes, pregnancy duration was set to 273 days.

<sup>5</sup>The Charlson/Elixhauser Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A combined comorbidity score predicted mortality in elderly patients better than existing scores. J Clin Epidemiol. 2011;64(7):749-759)

**Table 2a. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among All Ages**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: COVID-19 Hospitalization</b>								
Race (American Indian or Alaska Native)	2,853	533	1.22 (0.80, 1.86)	0.3507	2,853	533	1.52 (1.20, 1.93)	0.0006
Race (Asian)	16,783	1,923	0.95 (0.60, 1.53)	0.8480	16,783	1,923	1.50 (1.30, 1.72)	<.0001
Race (Black or African American)	80,325	23,007	1.55 (1.27, 1.90)	<.0001	80,325	23,007	1.70 (1.46, 1.97)	<.0001
Race (Native Hawaiian or Other Pacific Islander)	4,353	1,154	1.03 (0.75, 1.42)	0.8657	4,353	1,154	1.50 (1.11, 2.03)	0.0079
Race (Unknown)	354,640	30,398	0.61 (0.25, 1.47)	0.2682	354,640	30,398	1.17 (0.84, 1.62)	0.3620
Race (White)	382,674	72,787	Referent group	Referent group	382,674	72,787	Referent group	Referent group
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: Non-Critical COVID-19</b>								
Race (American Indian or Alaska Native)	2,853	263	1.19 (0.81, 1.74)	0.3821	2,853	263	1.45 (1.22, 1.72)	<.0001
Race (Asian)	16,783	840	0.86 (0.62, 1.21)	0.3921	16,783	840	1.26 (1.08, 1.48)	0.0036
Race (Black or African American)	80,325	10,211	1.55 (1.18, 2.04)	0.0019	80,325	10,211	1.63 (1.32, 2.03)	<.0001
Race (Native Hawaiian or Other Pacific Islander)	4,353	459	0.89 (0.64, 1.24)	0.4959	4,353	459	1.12 (0.90, 1.41)	0.3075
Race (Unknown)	354,640	14,045	0.62 (0.26, 1.48)	0.2834	354,640	14,045	1.07 (0.70, 1.64)	0.7583
Race (White)	382,674	33,821	Referent group	Referent group	382,674	33,821	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Critical COVID-19</b>								
Race (American Indian or Alaska Native)	550	305	0.92 (0.78, 1.09)	0.3616	550	305	1.00 (0.84, 1.18)	0.9761
Race (Asian)	1,984	1,146	1.03 (0.91, 1.17)	0.5880	1,984	1,146	1.10 (1.01, 1.21)	0.0364
Race (Black or African American)	23,583	14,137	0.99 (0.86, 1.15)	0.9019	23,583	14,137	1.04 (0.92, 1.16)	0.5397

**Table 2a. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among All Ages**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
Race (Native Hawaiian or Other Pacific Islander)	1,188	750	1.23 (1.09, 1.39)	0.0006	1,188	750	1.22 (1.09, 1.38)	0.0010
Race (Unknown)	31,330	17,658	1.02 (0.91, 1.14)	0.7674	31,330	17,658	1.09 (0.95, 1.25)	0.2012
Race (White)	75,138	43,353	Referent group	Referent group	75,138	43,353	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Inpatient Death</b>								
Race (American Indian or Alaska Native)	550	93	1.15 (0.86, 1.52)	0.3438	550	93	1.57 (1.24, 1.97)	0.0001
Race (Asian)	1,984	285	0.97 (0.61, 1.53)	0.8932	1,984	285	1.26 (1.10, 1.44)	0.0008
Race (Black or African American)	23,583	3,356	0.92 (0.88, 0.97)	0.0020	23,583	3,356	1.08 (0.94, 1.24)	0.2727
Race (Native Hawaiian or Other Pacific Islander)	1,188	207	0.87 (0.37, 2.06)	0.7597	1,188	207	1.22 (1.04, 1.42)	0.0146
Race (Unknown)	31,330	3,636	0.82 (0.74, 0.91)	0.0002	31,330	3,636	1.15 (0.97, 1.35)	0.0995
Race (White)	75,138	11,425	Referent group	Referent group	75,138	11,425	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Death (defined using the Death Table or Encounter Table)</b>								
Race (American Indian or Alaska Native)	550	94	1.08 (0.79, 1.48)	0.6281	550	94	1.53 (1.22, 1.93)	0.0003
Race (Asian)	1,984	290	0.91 (0.57, 1.46)	0.6976	1,984	290	1.24 (1.09, 1.42)	0.0013
Race (Black or African American)	23,583	3,405	0.91 (0.83, 1.00)	0.0405	23,583	3,405	1.05 (0.91, 1.21)	0.4829
Race (Native Hawaiian or Other Pacific Islander)	1,188	210	0.81 (0.34, 1.91)	0.6299	1,188	210	1.21 (1.03, 1.41)	0.0187
Race (Unknown)	31,330	3,709	0.79 (0.74, 0.84)	<.0001	31,330	3,709	1.11 (0.96, 1.28)	0.1587
Race (White)	75,138	11,766	Referent group	Referent group	75,138	11,766	Referent group	Referent group

<sup>1</sup>The covariates included in the adjusted models are described in the “Overview” section of the report.

**Table 2b. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among All Ages and Known Socioeconomic Status Information**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: COVID-19 Hospitalization</b>								
Race (American Indian or Alaska Native)	2,740	525	1.23 (0.82, 1.84)	0.3159	2,740	525	1.45 (1.11, 1.90)	0.0058
Race (Asian)	14,519	1,792	0.96 (0.61, 1.51)	0.8654	14,519	1,792	1.58 (1.38, 1.80)	<.0001
Race (Black or African American)	76,638	22,432	1.56 (1.27, 1.91)	<.0001	76,638	22,432	1.58 (1.40, 1.78)	<.0001
Race (Native Hawaiian or Other Pacific Islander)	4,163	1,122	0.92 (0.52, 1.60)	0.7601	4,163	1,122	1.32 (1.22, 1.42)	<.0001
Race (Unknown)	316,780	28,623	0.62 (0.24, 1.56)	0.3072	316,780	28,623	1.13 (0.85, 1.51)	0.3957
Race (White)	356,084	69,961	Referent group	Referent group	356,084	69,961	Referent group	Referent group
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: Non-Critical COVID-19</b>								
Race (American Indian or Alaska Native)	2,740	257	1.18 (0.81, 1.73)	0.3938	2,740	257	1.32 (1.17, 1.49)	<.0001
Race (Asian)	14,519	776	0.87 (0.62, 1.22)	0.4124	14,519	776	1.33 (1.21, 1.46)	<.0001
Race (Black or African American)	76,638	9,980	1.56 (1.17, 2.07)	0.0021	76,638	9,980	1.52 (1.22, 1.89)	0.0002
Race (Native Hawaiian or Other Pacific Islander)	4,163	451	0.87 (0.55, 1.35)	0.5264	4,163	451	1.28 (0.96, 1.70)	0.0904
Race (Unknown)	316,780	13,169	0.63 (0.26, 1.55)	0.3121	316,780	13,169	1.00 (0.78, 1.27)	0.9783
Race (White)	356,084	32,572	Referent group	Referent group	356,084	32,572	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Critical COVID-19</b>								
Race (American Indian or Alaska Native)	541	302	0.94 (0.79, 1.12)	0.4861	541	302	0.99 (0.84, 1.18)	0.9376
Race (Asian)	1,844	1,070	1.05 (0.95, 1.15)	0.3439	1,844	1,070	1.13 (0.99, 1.29)	0.0674
Race (Black or African American)	22,995	13,766	0.98 (0.84, 1.15)	0.8053	22,995	13,766	1.01 (0.89, 1.13)	0.9237

**Table 2b. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among All Ages and Known Socioeconomic Status Information**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
Race (Native Hawaiian or Other Pacific Islander)	1,154	725	1.21 (1.08, 1.37)	0.0017	1,154	725	1.17 (1.03, 1.32)	0.0122
Race (Unknown)	29,461	16,664	1.03 (0.93, 1.13)	0.5658	29,461	16,664	1.10 (0.96, 1.26)	0.1590
Race (White)	72,172	41,619	Referent group	Referent group	72,172	41,619	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Inpatient Death</b>								
Race (American Indian or Alaska Native)	541	93	1.20 (0.95, 1.52)	0.1194	541	93	1.52 (1.20, 1.91)	0.0004
Race (Asian)	1,844	272	0.96 (0.62, 1.50)	0.8672	1,844	272	1.30 (1.13, 1.49)	0.0002
Race (Black or African American)	22,995	3,291	0.94 (0.85, 1.05)	0.2825	22,995	3,291	1.03 (0.87, 1.22)	0.7139
Race (Native Hawaiian or Other Pacific Islander)	1,154	204	1.09 (0.72, 1.67)	0.6776	1,154	204	1.24 (1.06, 1.45)	0.0082
Race (Unknown)	29,461	3,474	0.84 (0.75, 0.94)	0.0030	29,461	3,474	1.12 (0.96, 1.30)	0.1645
Race (White)	72,172	10,998	Referent group	Referent group	72,172	10,998	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Death (defined using the Death Table or Encounter Table)</b>								
Race (American Indian or Alaska Native)	541	94	1.13 (0.86, 1.49)	0.3866	541	94	1.49 (1.18, 1.87)	0.0007
Race (Asian)	1,844	277	0.91 (0.58, 1.43)	0.6825	1,844	277	1.29 (1.13, 1.48)	0.0003
Race (Black or African American)	22,995	3,338	0.92 (0.81, 1.05)	0.2048	22,995	3,338	1.00 (0.84, 1.19)	0.9917
Race (Native Hawaiian or Other Pacific Islander)	1,154	207	1.08 (0.75, 1.57)	0.6825	1,154	207	1.23 (1.05, 1.44)	0.0101
Race (Unknown)	29,461	3,546	0.80 (0.73, 0.88)	<.0001	29,461	3,546	1.09 (0.95, 1.26)	0.2304
Race (White)	72,172	11,322	Referent group	Referent group	72,172	11,322	Referent group	Referent group

<sup>1</sup>The covariates included in the adjusted models are described in the "Overview" section of the report.



**Table 2c. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among Those Less Than 65 Years of Age**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: COVID-19 Hospitalization</b>								
Race (American Indian or Alaska Native)	1,740	157	1.53 (1.07, 2.17)	0.0184	1,740	157	***	***
Race (Asian)	12,360	582	1.21 (0.92, 1.59)	0.1772	12,360	582	***	***
Race (Black or African American)	32,199	5,304	1.82 (1.25, 2.64)	0.0017	32,199	5,304	***	***
Race (Native Hawaiian or Other Pacific Islander)	1,195	145	1.55 (0.87, 2.78)	0.1376	1,195	145	***	***
Race (Unknown)	286,937	12,902	0.69 (0.19, 2.48)	0.5740	286,937	12,902	***	***
Race (White)	152,609	11,094	Referent group	Referent group	152,609	11,094	Referent group	Referent group
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: Non-Critical COVID-19</b>								
Race (American Indian or Alaska Native)	1,740	75	1.52 (0.88, 2.62)	0.1358	1,740	75	***	***
Race (Asian)	12,360	283	1.18 (0.83, 1.67)	0.3545	12,360	283	***	***
Race (Black or African American)	32,199	2,423	1.85 (1.27, 2.69)	0.0014	32,199	2,423	***	***
Race (Native Hawaiian or Other Pacific Islander)	1,195	63	1.28 (0.88, 1.86)	0.2043	1,195	63	***	***
Race (Unknown)	286,937	6,362	0.73 (0.24, 2.22)	0.5857	286,937	6,362	***	***
Race (White)	152,609	5,268	Referent group	Referent group	152,609	5,268	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Critical COVID-19</b>								
Race (American Indian or Alaska Native)	163	88	0.98 (0.72, 1.35)	0.9235	163	88	1.06 (0.77, 1.46)	0.7279
Race (Asian)	608	310	0.97 (0.82, 1.15)	0.7396	608	310	1.09 (0.92, 1.29)	0.3360
Race (Black or African American)	5,452	3,148	1.02 (0.88, 1.19)	0.8053	5,452	3,148	1.05 (0.91, 1.21)	0.5036

**Table 2c. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among Those Less Than 65 Years of Age**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
Race (Native Hawaiian or Other Pacific Islander)	155	91	1.11 (0.79, 1.57)	0.5344	155	91	1.19 (0.81, 1.74)	0.3857
Race (Unknown)	13,359	6,986	0.92 (0.76, 1.12)	0.3997	13,359	6,986	1.08 (1.02, 1.15)	0.0080
Race (White)	11,499	6,403	Referent group	Referent group	11,499	6,403	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Inpatient Death</b>								
Race (American Indian or Alaska Native)	163	15	1.60 (0.95, 2.71)	0.0799	163	15	1.90 (1.11, 3.25)	0.0195
Race (Asian)	608	31	1.07 (0.74, 1.56)	0.7057	608	31	1.37 (0.93, 2.01)	0.1088
Race (Black or African American)	5,452	397	0.94 (0.78, 1.14)	0.5503	5,452	397	0.94 (0.83, 1.08)	0.3903
Race (Native Hawaiian or Other Pacific Islander)	155	15	1.64 (0.71, 3.81)	0.2455	155	15	1.78 (0.88, 3.62)	0.1107
Race (Unknown)	13,359	681	0.95 (0.58, 1.57)	0.8430	13,359	681	1.18 (0.93, 1.49)	0.1816
Race (White)	11,499	846	Referent group	Referent group	11,499	846	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Death (defined using the Death Table or Encounter Table)</b>								
Race (American Indian or Alaska Native)	163	15	1.56 (0.92, 2.65)	0.0965	163	15	1.87 (1.09, 3.21)	0.0223
Race (Asian)	608	31	1.05 (0.72, 1.52)	0.8094	608	31	1.35 (0.92, 1.98)	0.1269
Race (Black or African American)	5,452	399	0.91 (0.79, 1.05)	0.2025	5,452	399	0.94 (0.83, 1.08)	0.3817
Race (Native Hawaiian or Other Pacific Islander)	155	15	1.57 (0.72, 3.39)	0.2539	155	15	1.80 (0.83, 3.90)	0.1389
Race (Unknown)	13,359	686	0.93 (0.57, 1.51)	0.7594	13,359	686	1.16 (0.93, 1.45)	0.1982
Race (White)	11,499	859	Referent group	Referent group	11,499	859	Referent group	Referent group

<sup>1</sup>The covariates included in the adjusted models are described in the "Overview" section of the report.

\*\*\*Results not shown as logs from 1 of 3 included DP sites contained warnings regarding model convergence for these outcomes

**Table 2d. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among Those Less Than 65 Years of Age and Known Socioeconomic Status Information**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: COVID-19 Hospitalization</b>								
Race (American Indian or Alaska Native)	1,647	153	1.52 (1.06, 2.19)	0.0229	1,647	153	***	***
Race (Asian)	10,337	512	1.21 (0.91, 1.61)	0.1836	10,337	512	***	***
Race (Black or African American)	29,781	5,144	1.82 (1.25, 2.66)	0.0019	29,781	5,144	***	***
Race (Native Hawaiian or Other Pacific Islander)	1,050	126	1.36 (0.88, 2.10)	0.1686	1,050	126	***	***
Race (Unknown)	252,757	11,881	0.70 (0.19, 2.54)	0.5852	252,757	11,881	***	***
Race (White)	135,477	10,504	Referent group	Referent group	135,477	10,504	Referent group	Referent group
<b>Index Event: COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting)</b>								
<b>Outcome: Non-Critical COVID-19</b>								
Race (American Indian or Alaska Native)	1,647	71	1.48 (0.84, 2.58)	0.1738	1,647	71	1.29 (0.84, 1.97)	0.2404
Race (Asian)	10,337	245	1.17 (0.82, 1.68)	0.3841	10,337	245	1.49 (1.04, 2.13)	0.0287
Race (Black or African American)	29,781	2,351	1.85 (1.26, 2.72)	0.0016	29,781	2,351	1.54 (1.20, 1.96)	0.0006
Race (Native Hawaiian or Other Pacific Islander)	1,050	57	1.13 (0.87, 1.49)	0.3583	1,050	57	1.21 (0.86, 1.71)	0.2749
Race (Unknown)	252,757	5,828	0.74 (0.24, 2.25)	0.5903	252,757	5,828	1.02 (0.59, 1.77)	0.9417
Race (White)	135,477	4,978	Referent group	Referent group	135,477	4,978	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Critical COVID-19</b>								
Race (American Indian or Alaska Native)	158	87	1.03 (0.75, 1.42)	0.8642	158	87	1.10 (0.79, 1.53)	0.5747
Race (Asian)	534	276	1.00 (0.83, 1.19)	0.9684	534	276	1.17 (0.97, 1.41)	0.0927
Race (Black or African American)	5,285	3,052	1.02 (0.88, 1.17)	0.8382	5,285	3,052	1.04 (0.94, 1.16)	0.4399

**Table 2d. Overall Association Between Race and COVID-19 Outcomes in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021 Among Those Less Than 65 Years of Age and Known Socioeconomic Status Information**

	Crude Analyses				Adjusted Analyses			
	Total Number of Patients	Patients with an Event	Crude Odds Ratio (95% CI)	P-Value	Total Number of Patients	Patients with an Event	Adjusted <sup>1</sup> Odds Ratio (95% CI)	P-Value
Race (Native Hawaiian or Other Pacific Islander)	134	77	1.02 (0.72, 1.44)	0.9033	134	77	1.18 (0.73, 1.90)	0.5049
Race (Unknown)	12,280	6,455	0.93 (0.75, 1.14)	0.4585	12,280	6,455	1.08 (1.01, 1.15)	0.0163
Race (White)	10,876	6,080	Referent group	Referent group	10,876	6,080	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Inpatient Death</b>								
Race (American Indian or Alaska Native)	158	15	1.67 (0.98, 2.83)	0.0580	158	15	1.82 (1.06, 3.13)	0.0296
Race (Asian)	534	29	1.16 (0.79, 1.70)	0.4587	534	29	1.58 (1.06, 2.36)	0.0239
Race (Black or African American)	5,285	389	0.98 (0.76, 1.25)	0.8637	5,285	389	0.90 (0.78, 1.04)	0.1440
Race (Native Hawaiian or Other Pacific Islander)	134	14	1.78 (0.68, 4.65)	0.2387	134	14	1.91 (1.09, 3.33)	0.0235
Race (Unknown)	12,280	645	1.00 (0.58, 1.72)	0.9894	12,280	645	1.14 (0.95, 1.38)	0.1596
Race (White)	10,876	811	Referent group	Referent group	10,876	811	Referent group	Referent group
<b>Index Event: COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting)</b>								
<b>Outcome: Death (defined using the Death Table or Encounter Table)</b>								
Race (American Indian or Alaska Native)	158	15	1.62 (0.96, 2.75)	0.0716	158	15	1.83 (1.07, 3.14)	0.0282
Race (Asian)	534	29	1.12 (0.76, 1.65)	0.5524	534	29	1.55 (1.04, 2.30)	0.0321
Race (Black or African American)	5,285	391	0.94 (0.77, 1.16)	0.5797	5,285	391	0.89 (0.78, 1.02)	0.1025
Race (Native Hawaiian or Other Pacific Islander)	134	14	1.68 (0.70, 4.01)	0.2437	134	14	1.88 (1.08, 3.28)	0.0265
Race (Unknown)	12,280	650	0.97 (0.57, 1.64)	0.9025	12,280	650	1.14 (0.94, 1.38)	0.1923
Race (White)	10,876	824	Referent group	Referent group	10,876	824	Referent group	Referent group

<sup>1</sup>The covariates included in the adjusted models are described in the "Overview" section of the report.

\*\*\*Results not shown as logs from 1 of 3 included DP sites contained warnings regarding model convergence for these outcomes

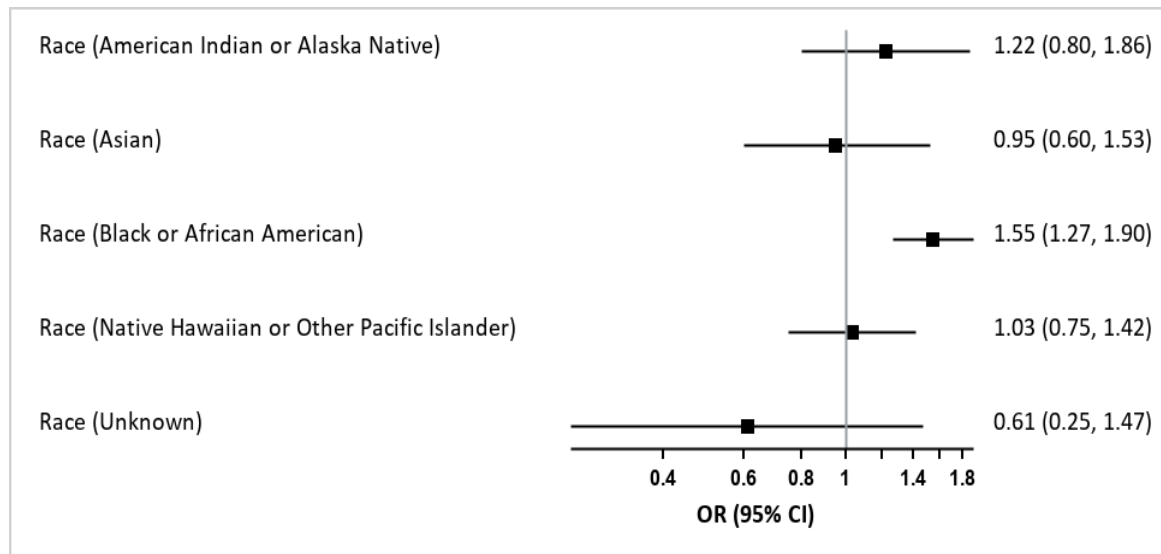
**Table 3. Summary of Patient Level Cohort Attrition in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

	COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) among all ages		COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting) among all ages		COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) among those less than 65 years of age		COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting) among those less than 65 years of age	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
<b>Members meeting enrollment and demographic requirements</b>								
Enrolled at any point during the query period	35,481,416	N/A	35,481,416	N/A	35,481,416	N/A	35,481,416	N/A
Had required coverage type (medical and/or drug coverage)	17,307,374	18,174,042	17,307,374	18,174,042	17,307,374	18,174,042	17,307,374	18,174,042
Enrolled during specified age range	17,307,286	88	17,307,286	88	10,775,909	6,531,465	10,775,909	6,531,465
Had requestable medical charts	17,307,286	0	17,307,286	0	10,775,909	0	10,775,909	0
Met demographic requirements (sex, race, and Hispanic origin)	17,306,170	1,116	17,306,170	1,116	10,774,889	1,020	10,774,889	1,020
<b>Members with a valid index event</b>								
Had any cohort-defining claim during the query period	985,840	16,320,330	154,138	17,152,032	594,978	10,179,911	40,527	10,734,362
Claim recorded during specified age range	985,837	3	154,138	0	580,428	14,550	37,953	2,574
Episode defining index claim recorded during the query period	985,837	0	154,138	0	580,428	0	37,953	0
<b>Members with required pre-index history</b>								
Had sufficient pre-index continuous enrollment	841,628	144,209	133,773	20,365	487,040	93,388	31,236	6,717
Met inclusion and exclusion criteria	841,628	0	133,773	0	487,040	0	31,236	0

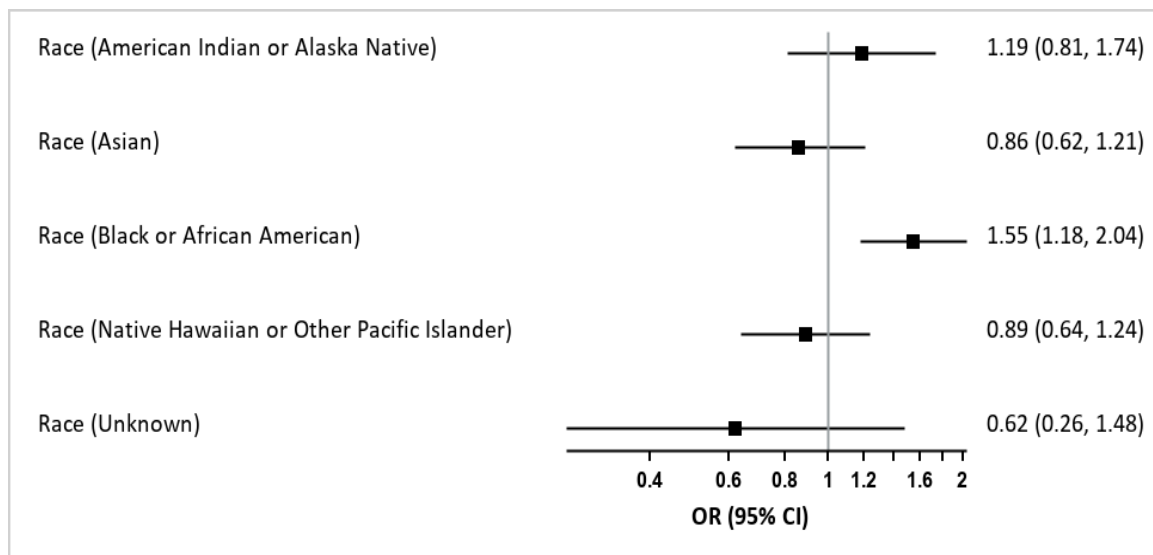
**Table 3. Summary of Patient Level Cohort Attrition in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

	COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) among all ages		COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting) among all ages		COVID-19 (PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting) among those less than 65 years of age		COVID-19 hospitalization (U07.1 diagnosis code in the inpatient care setting) among those less than 65 years of age	
	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded	Remaining	Excluded
Met event incidence criteria	841,628	0	133,773	0	487,040	0	31,236	0
<b>Members with required post-index follow-up</b>								
Had sufficient post-index continuous enrollment	841,628	0	133,773	0	487,040	0	31,236	0
Had index episode of at least required length	841,628	0	133,773	0	487,040	0	31,236	0
Had index episode longer than blackout period	841,628	0	133,773	0	487,040	0	31,236	0
Did not have an event during blackout period	841,628	0	133,773	0	487,040	0	31,236	0
<b>Final cohort</b>								
Number of members	841,628	N/A	133,773	N/A	487,040	N/A	31,236	N/A
Number of episodes	841,628	N/A	133,773	N/A	487,040	N/A	31,236	N/A

**Figure 1. Forest Plot for the Crude Association Between Race and COVID-19 Hospitalization Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Figure 2. Forest Plot for the Crude Association Between Race and Non-Critical COVID-19 Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**





**Figure 3. Forest Plot for the Crude Association Between Race and Critical COVID-19 Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

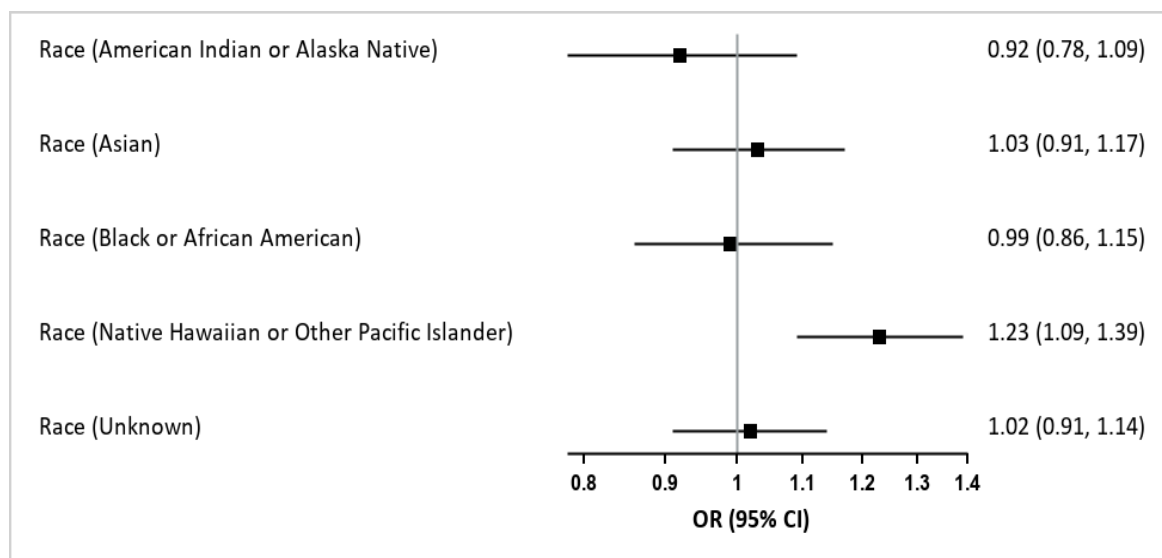
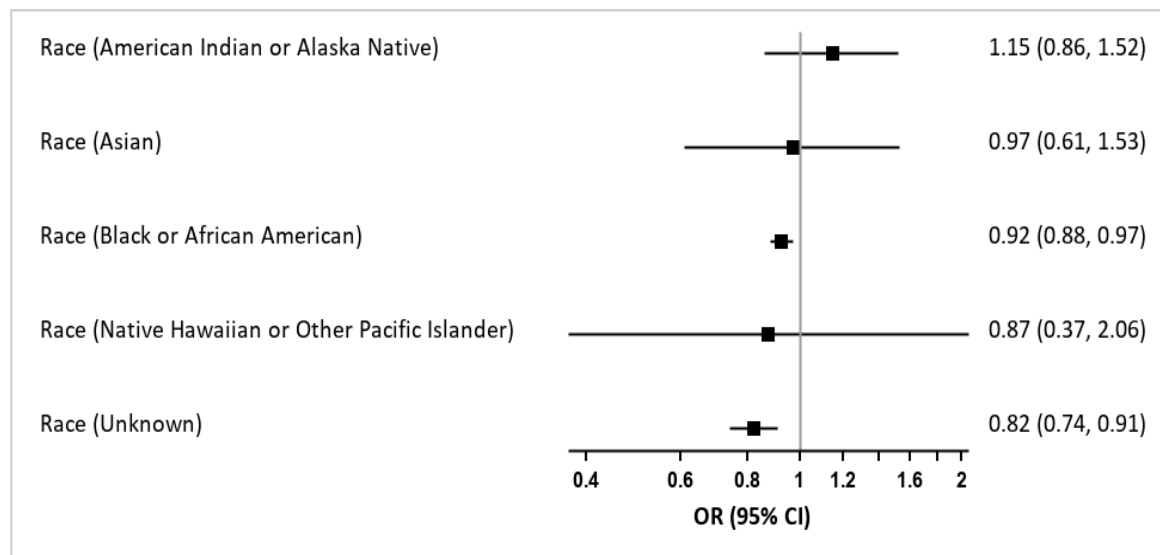
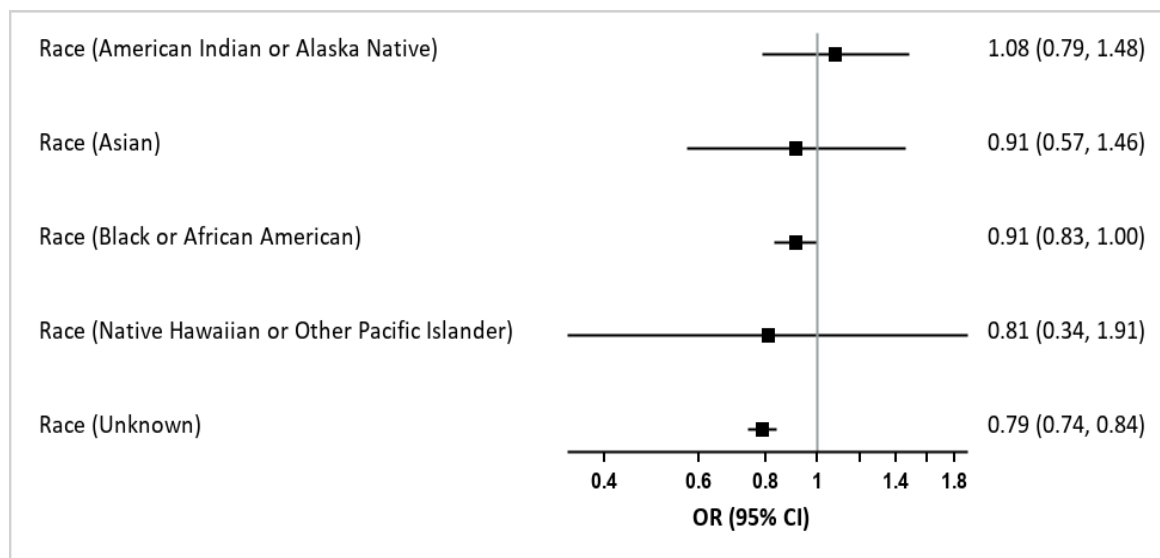


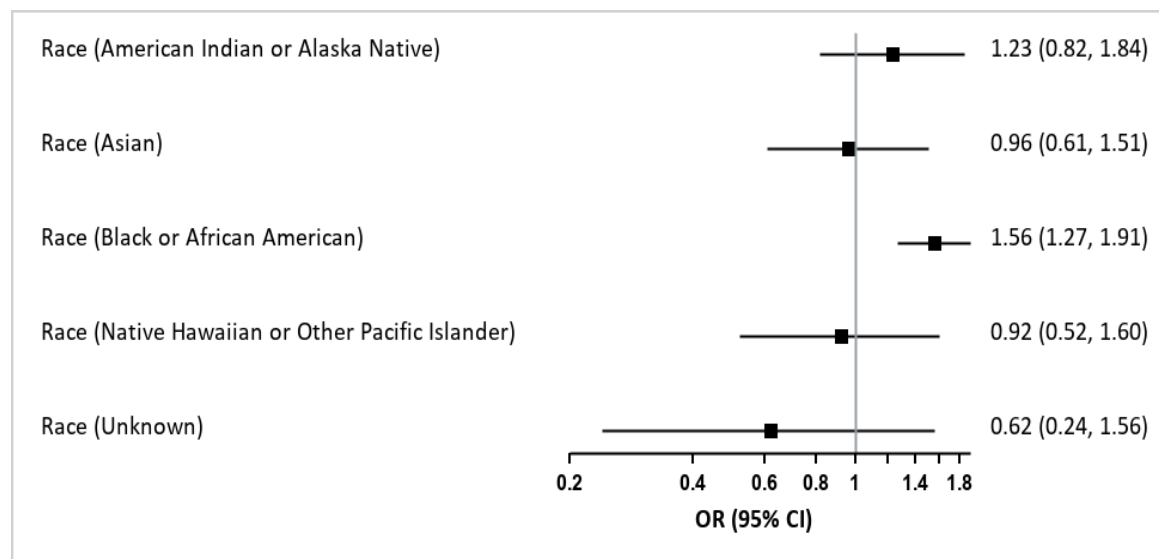
Figure 4. Forest Plot for the Crude Association Between Race and Inpatient Death Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021



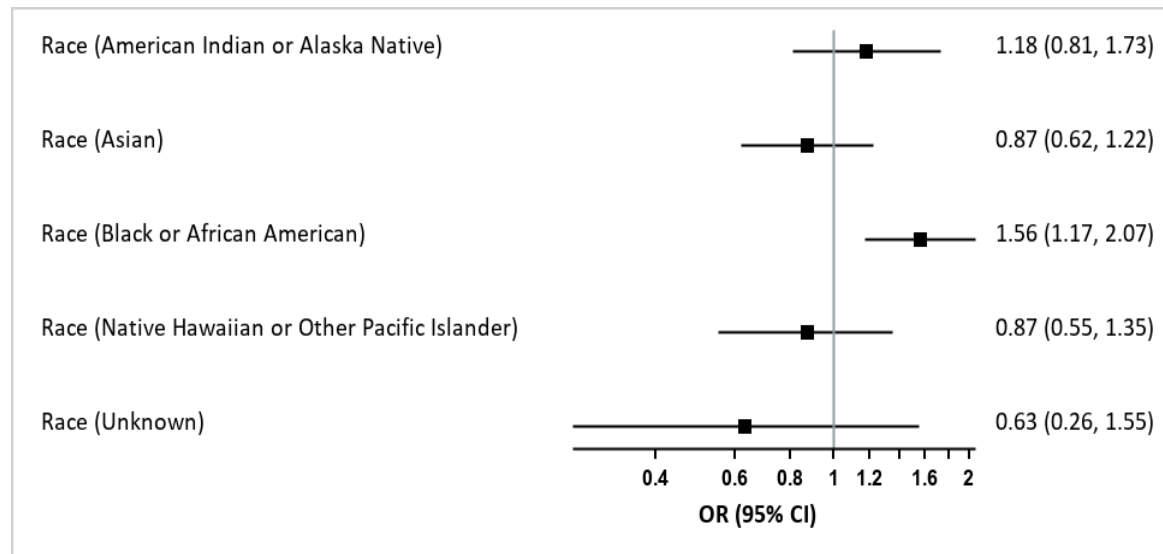
**Figure 5. Forest Plot for the Crude Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



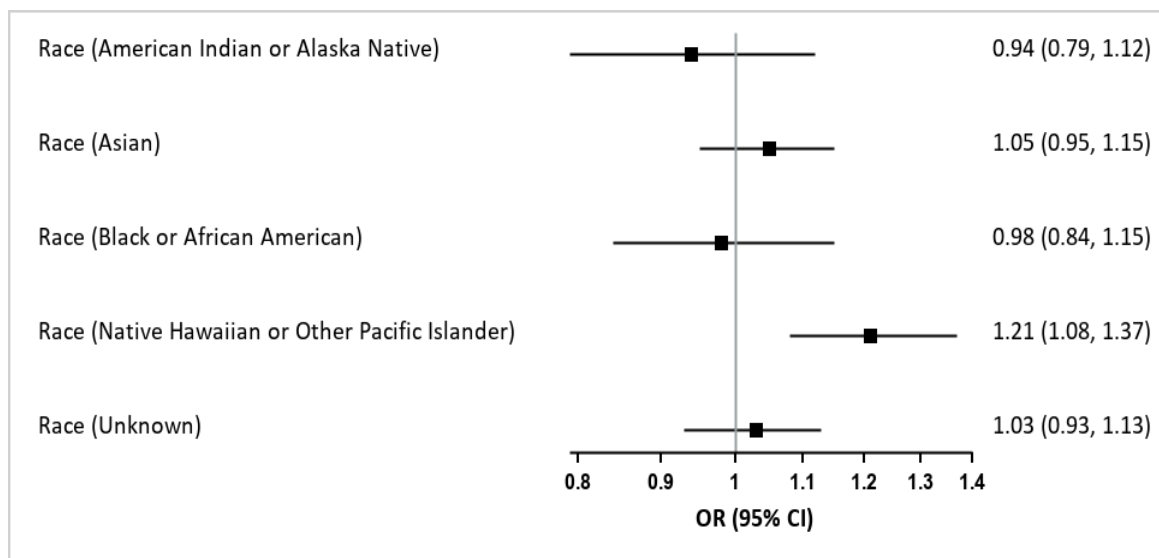
**Figure 6. Forest Plot for the Crude Association Between Race and COVID-19 Hospitalization Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



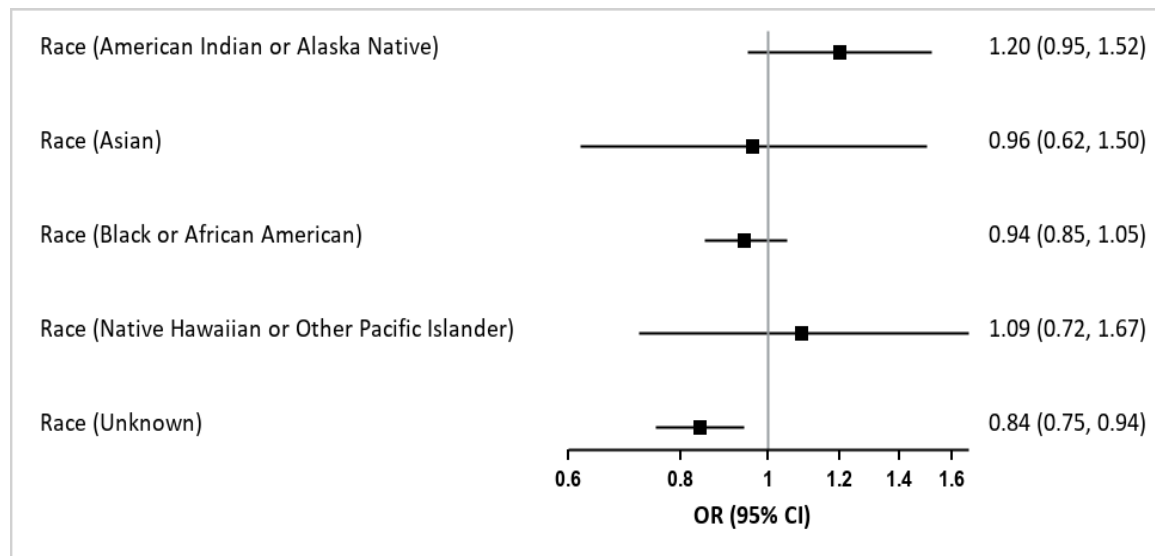
**Figure 7. Forest Plot for the Crude Association Between Race and Non-Critical COVID-19 Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



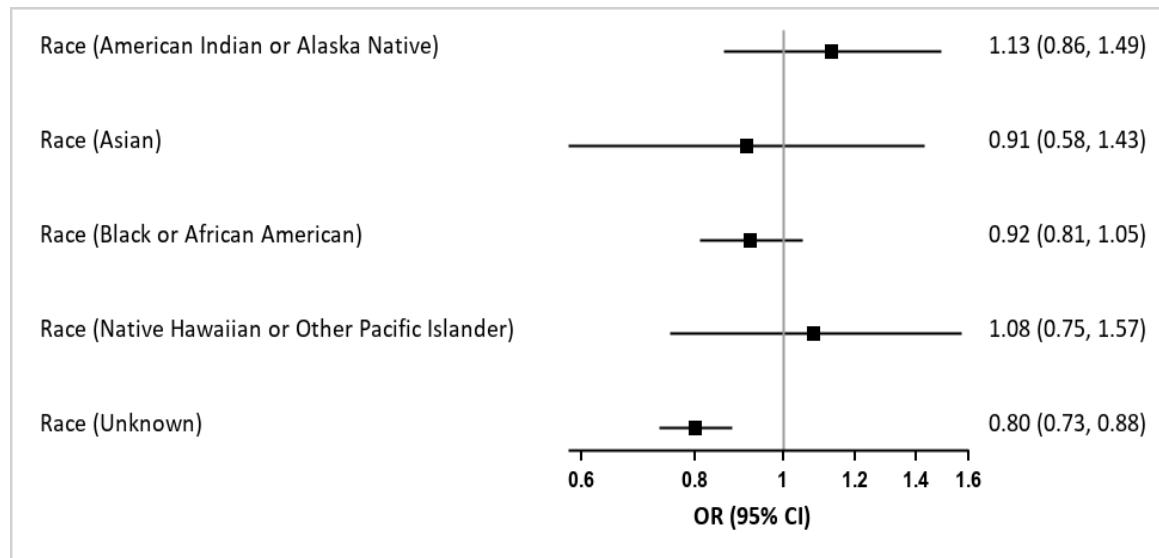
**Figure 8. Forest Plot for the Crude Association Between Race and Critical COVID-19 Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Figure 9. Forest Plot for the Crude Association Between Race and Inpatient Death Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

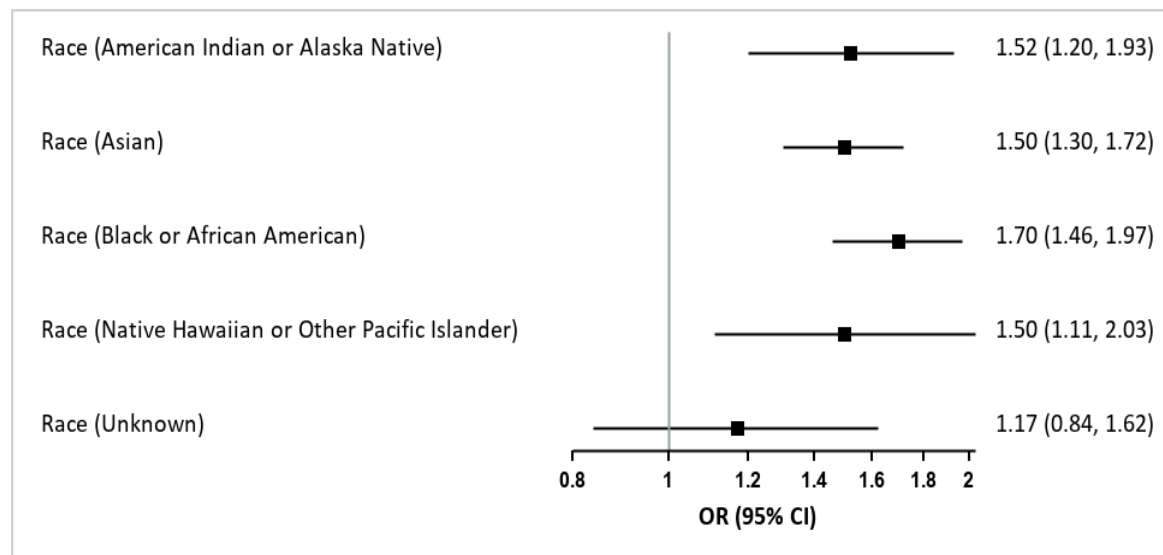


**Figure 10. Forest Plot for the Crude Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

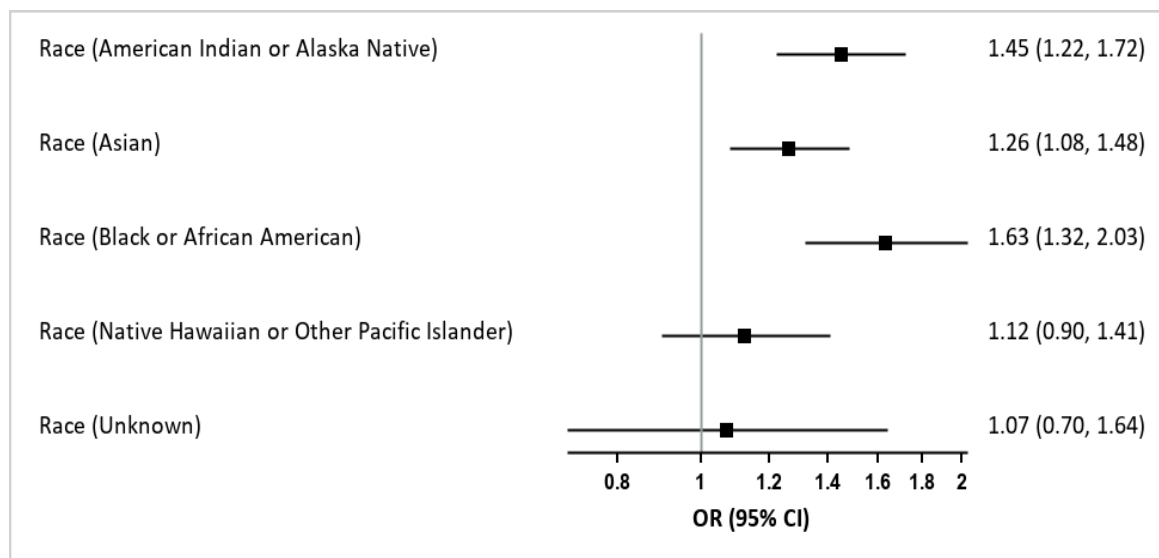




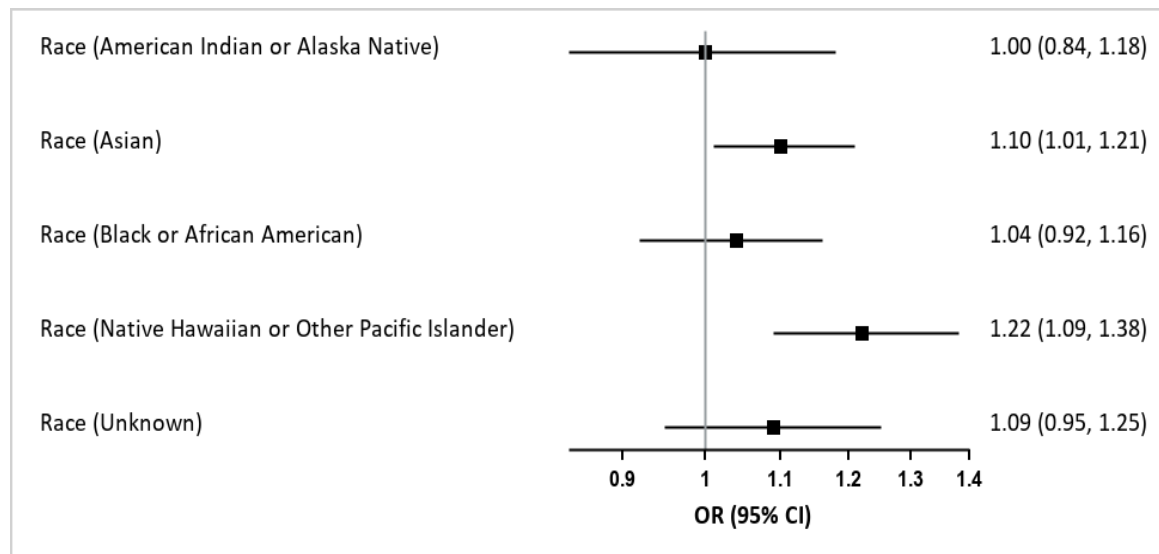
**Figure 11. Forest Plot for the Adjusted Association Between Race and COVID-19 Hospitalization Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



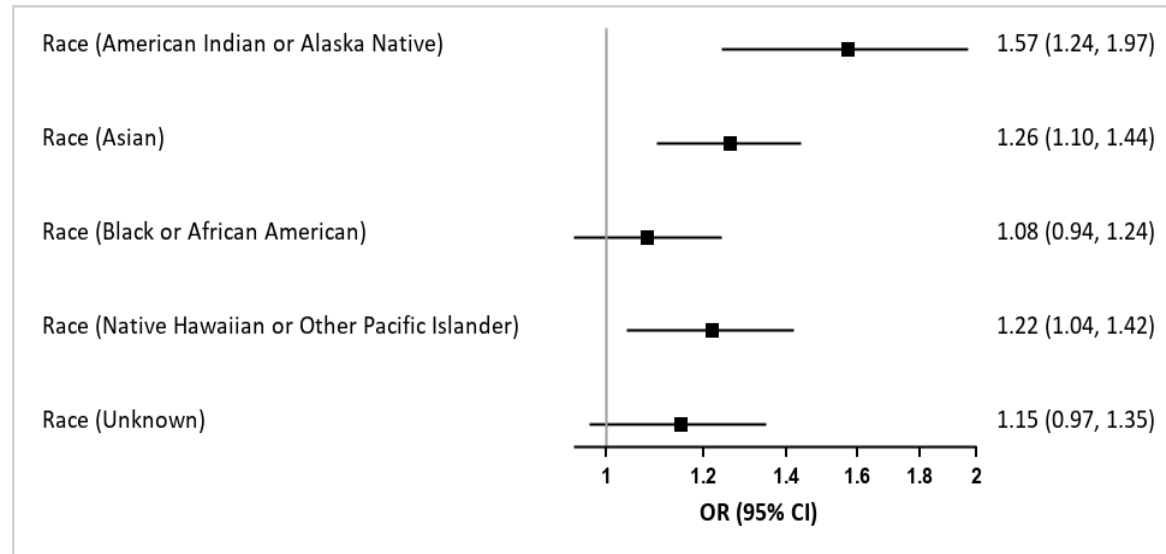
**Figure 12. Forest Plot for the Adjusted Association Between Race and Non-Critical COVID-19 Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



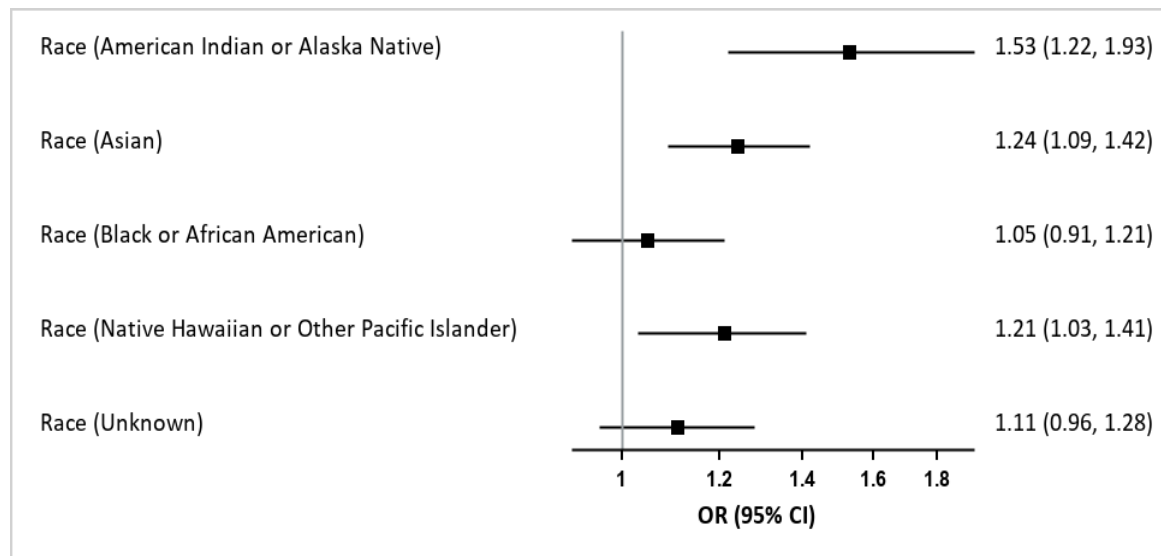
**Figure 13. Forest Plot for the Adjusted Association Between Race and Critical COVID-19 Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



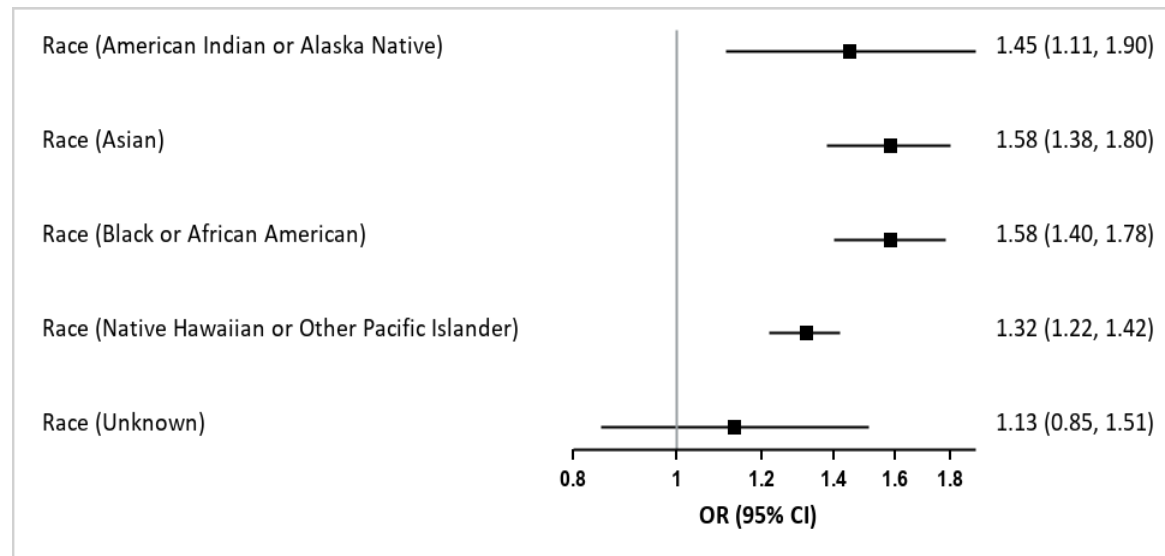
**Figure 14. Forest Plot for the Adjusted Association Between Race and Inpatient Death Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



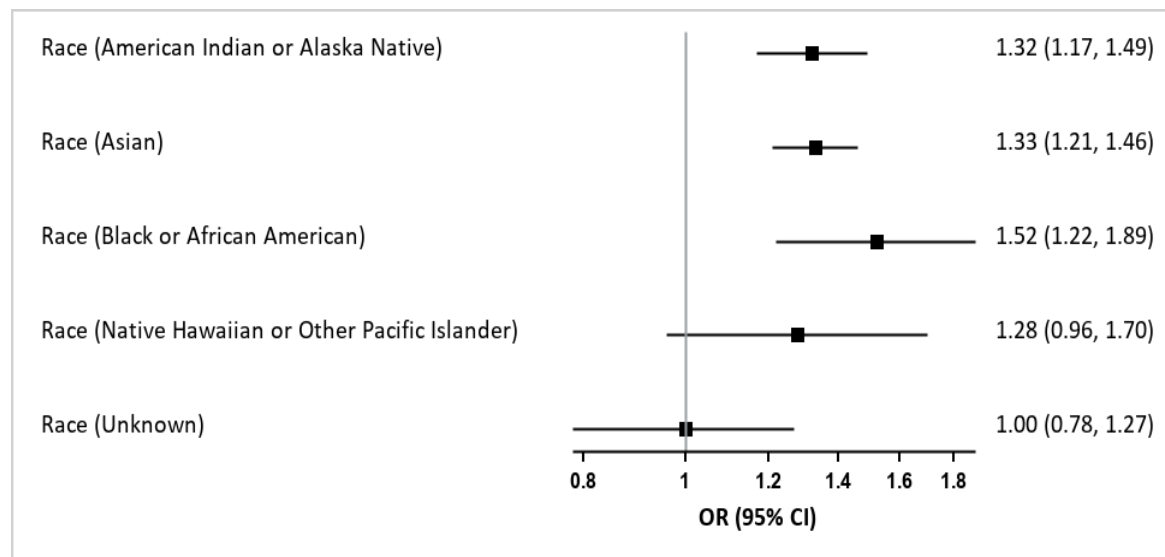
**Figure 15. Forest Plot for the Adjusted Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among All Ages in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



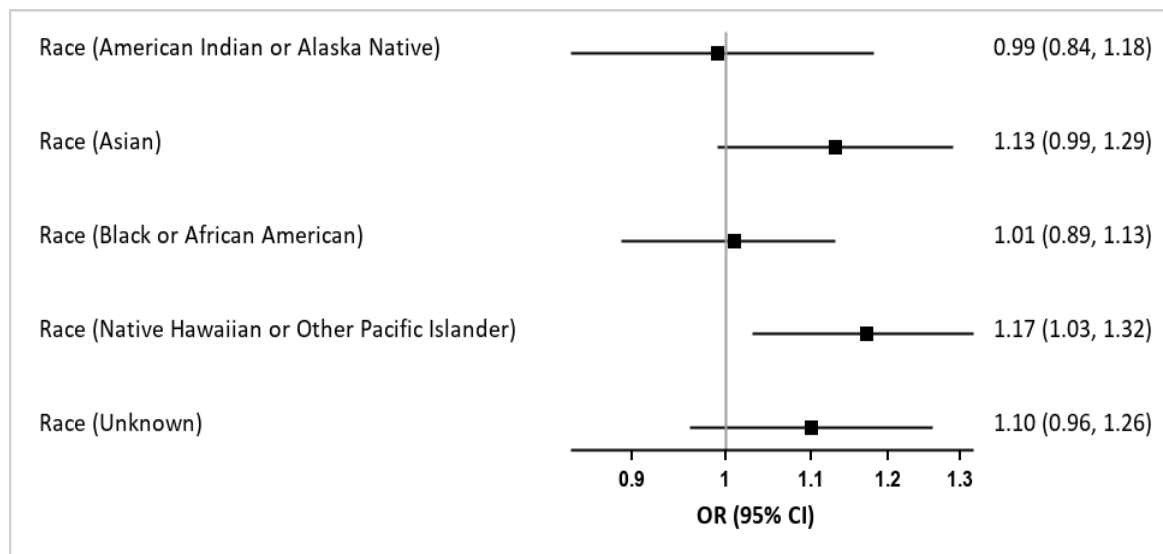
**Figure 16. Forest Plot for the Adjusted Association Between Race and COVID-19 Hospitalization Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Figure 17. Forest Plot for the Adjusted Association Between Race and Non-Critical COVID-19 Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

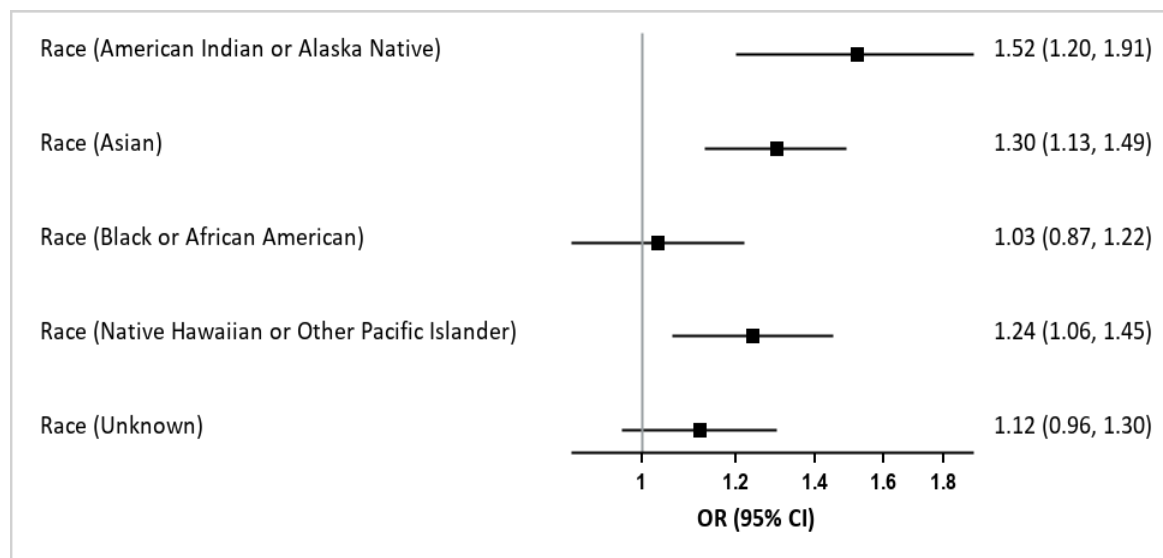


**Figure 18. Forest Plot for the Adjusted Association Between Race and Critical COVID-19 Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

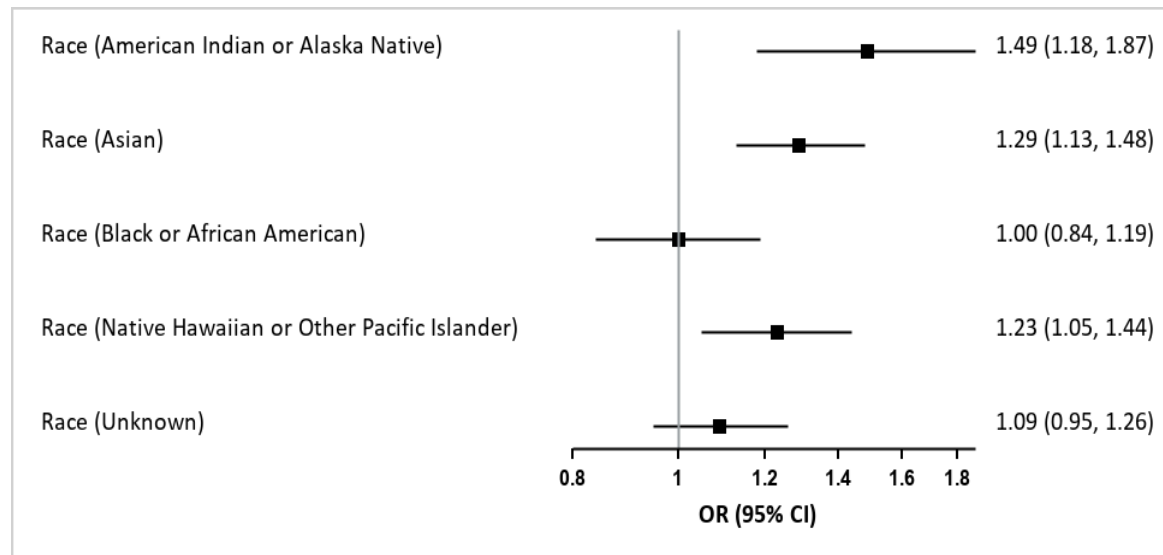




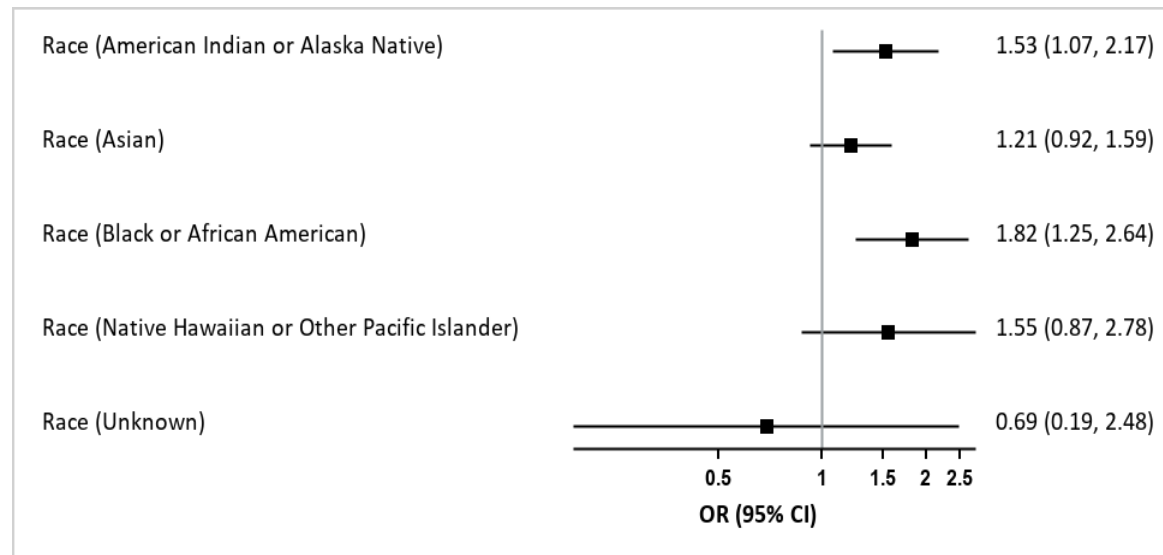
**Figure 19. Forest Plot for the Adjusted Association Between Race and Inpatient Death Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



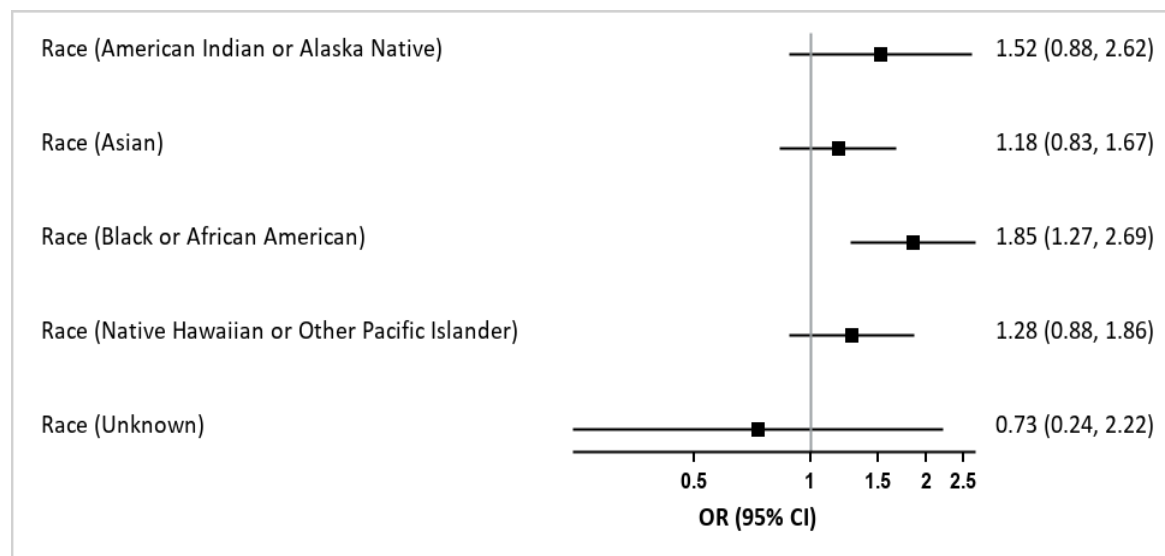
**Figure 20. Forest Plot for the Adjusted Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among All Ages with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



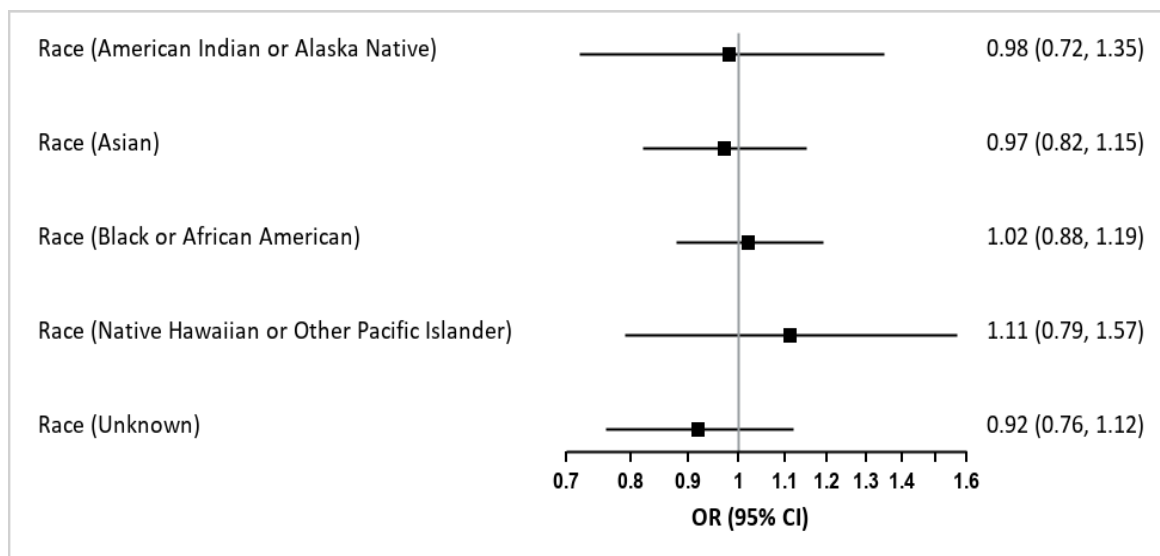
**Figure 21. Forest Plot for the Crude Association Between Race and COVID-19 Hospitalization Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



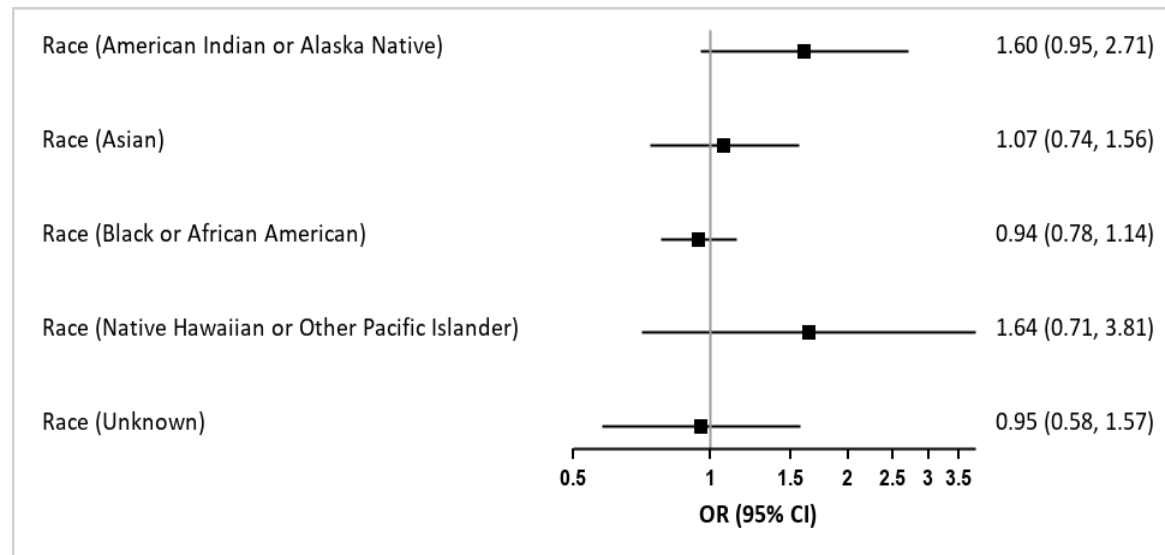
**Figure 22. Forest Plot for the Crude Association Between Race and Non-Critical COVID-19 Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



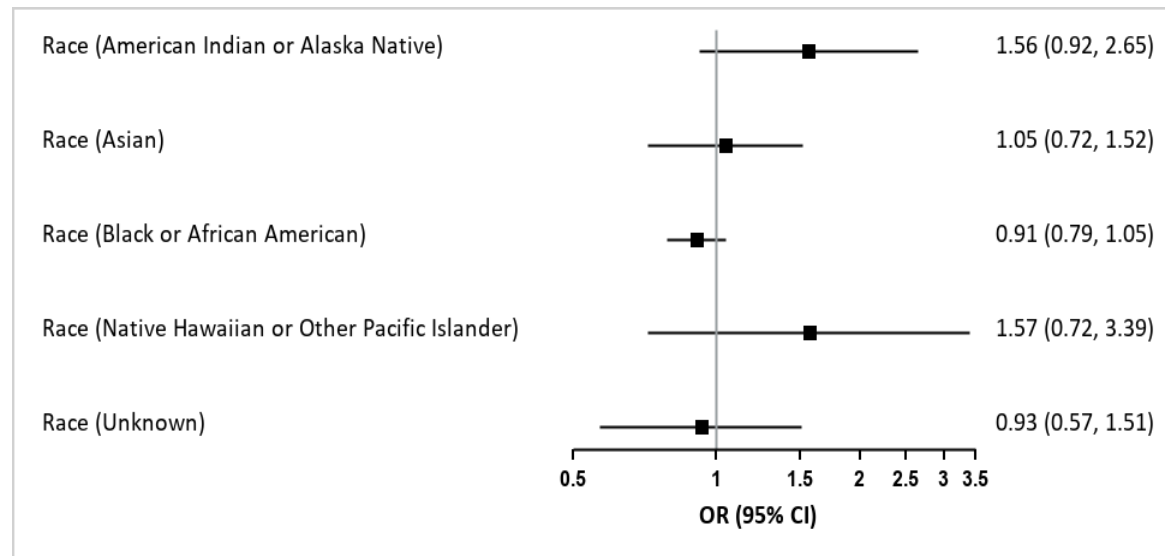
**Figure 23. Forest Plot for the Crude Association Between Race and Critical COVID-19 Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



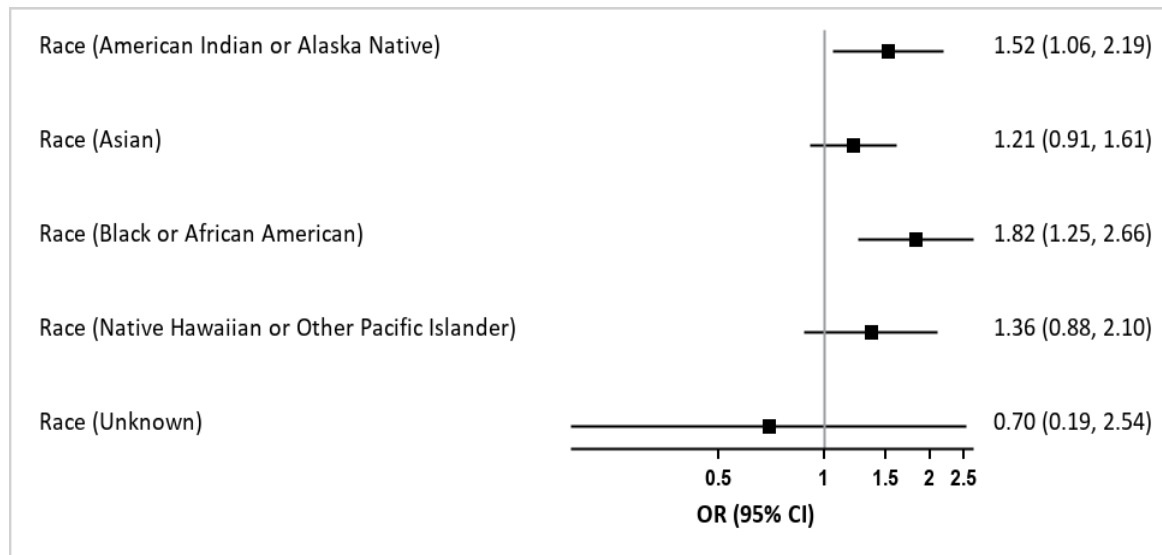
**Figure 24. Forest Plot for the Crude Association Between Race and Inpatient Death Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Figure 25. Forest Plot for the Crude Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

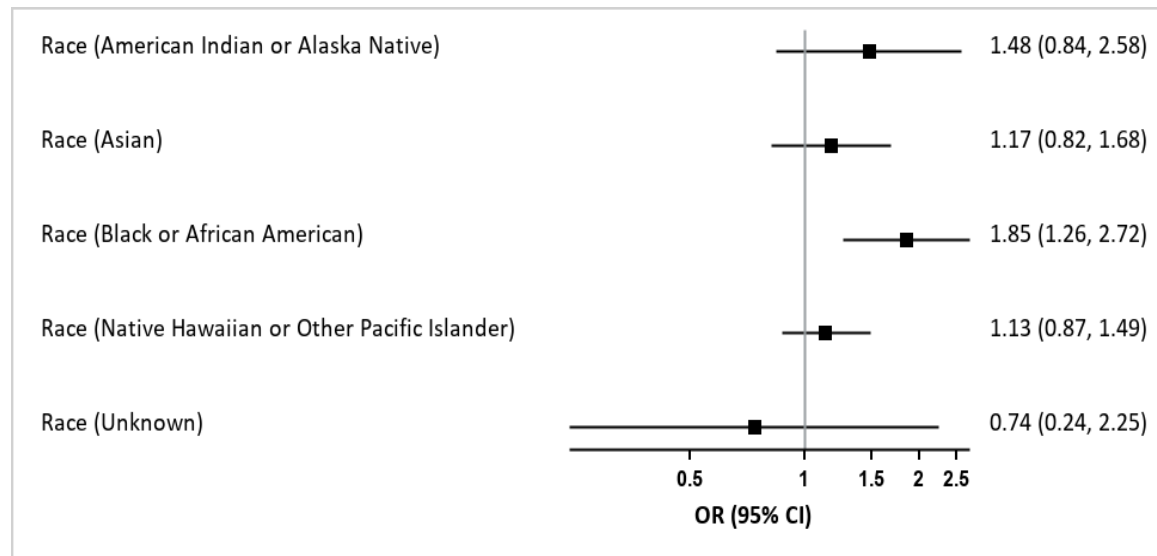


**Figure 26. Forest Plot for the Crude Association Between Race and COVID-19 Hospitalization Among Those Less Than 65 Years of Age with All SES Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

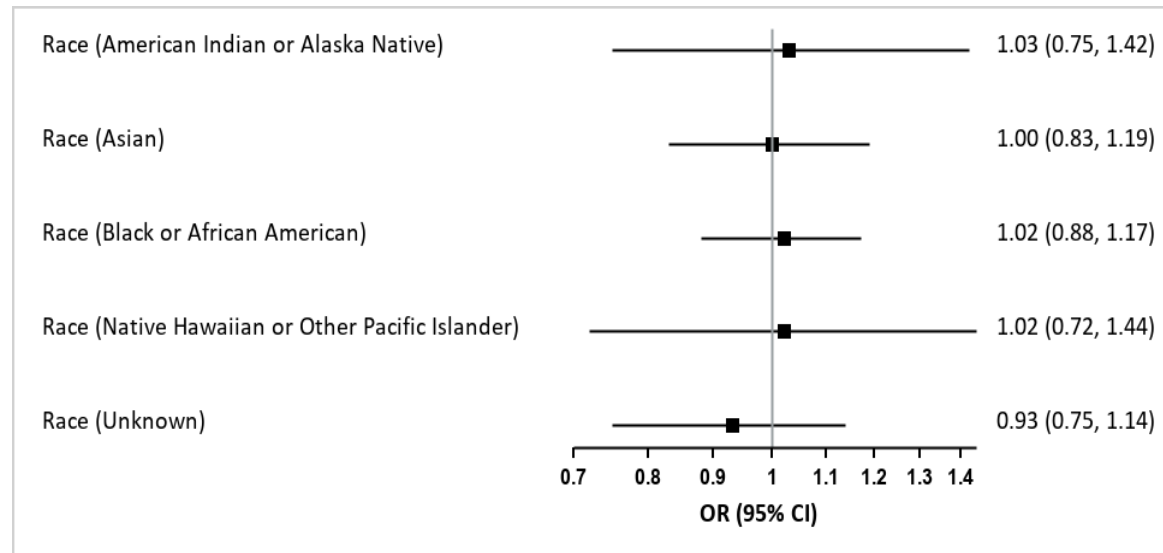




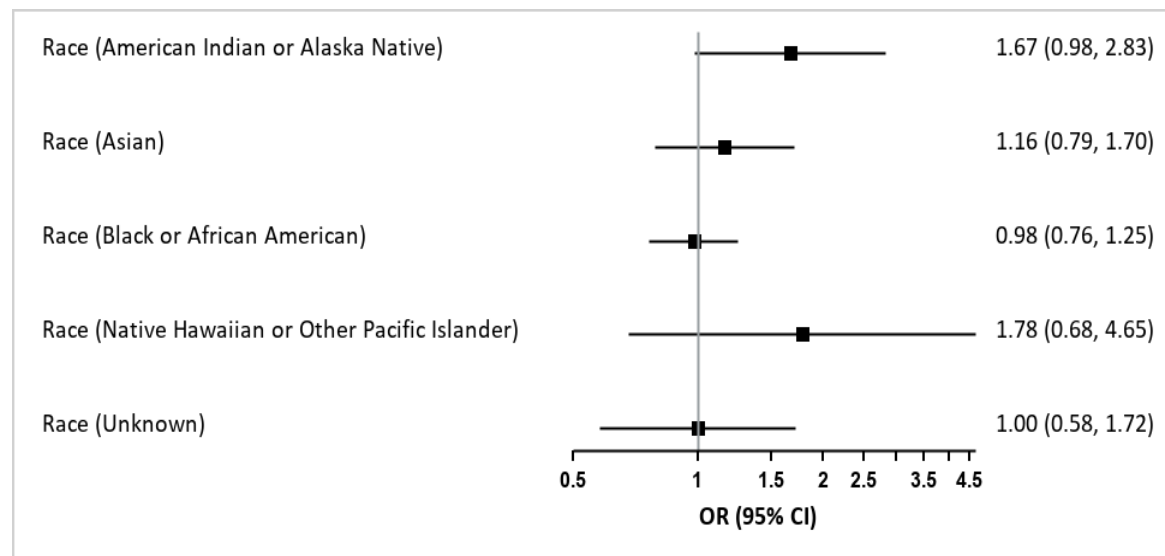
**Figure 27. Forest Plot for the Crude Association Between Race and Non-Critical COVID-19 Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



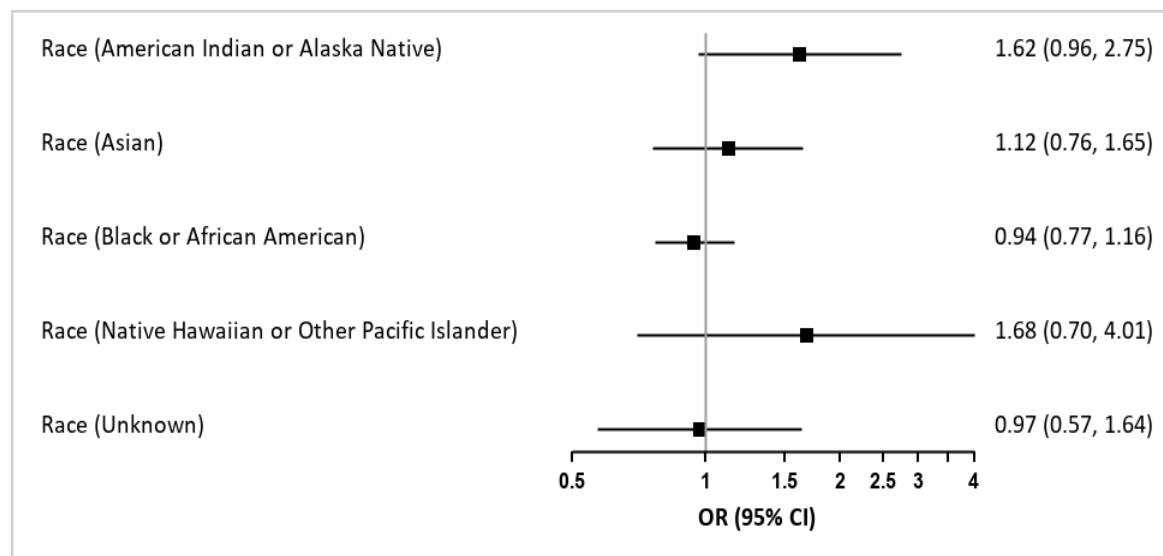
**Figure 28. Forest Plot for the Crude Association Between Race and Critical COVID-19 Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



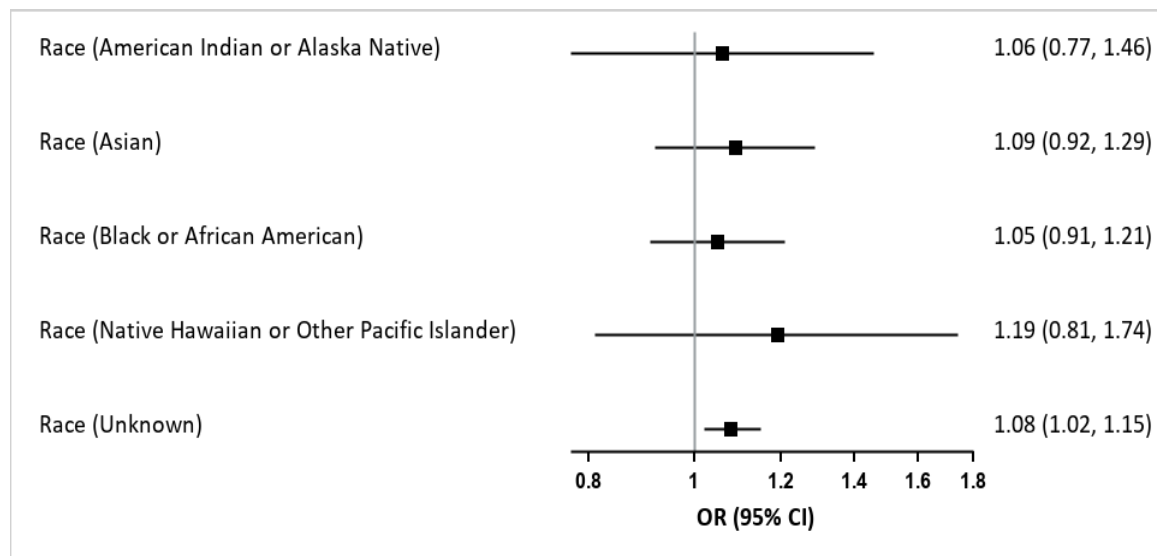
**Figure 29. Forest Plot for the Crude Association Between Race and Inpatient Death Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



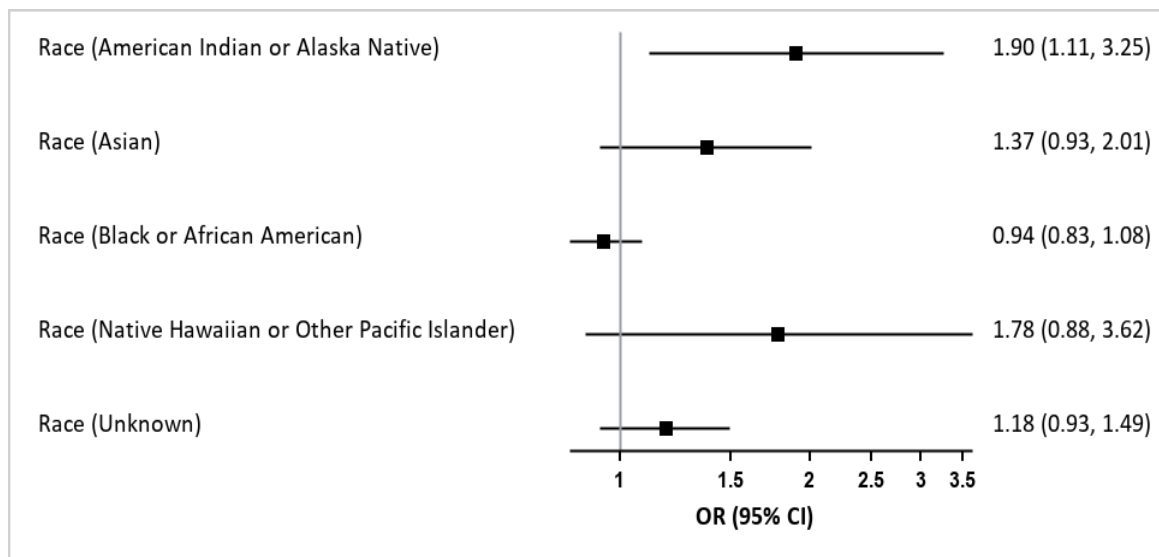
**Figure 30. Forest Plot for the Crude Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



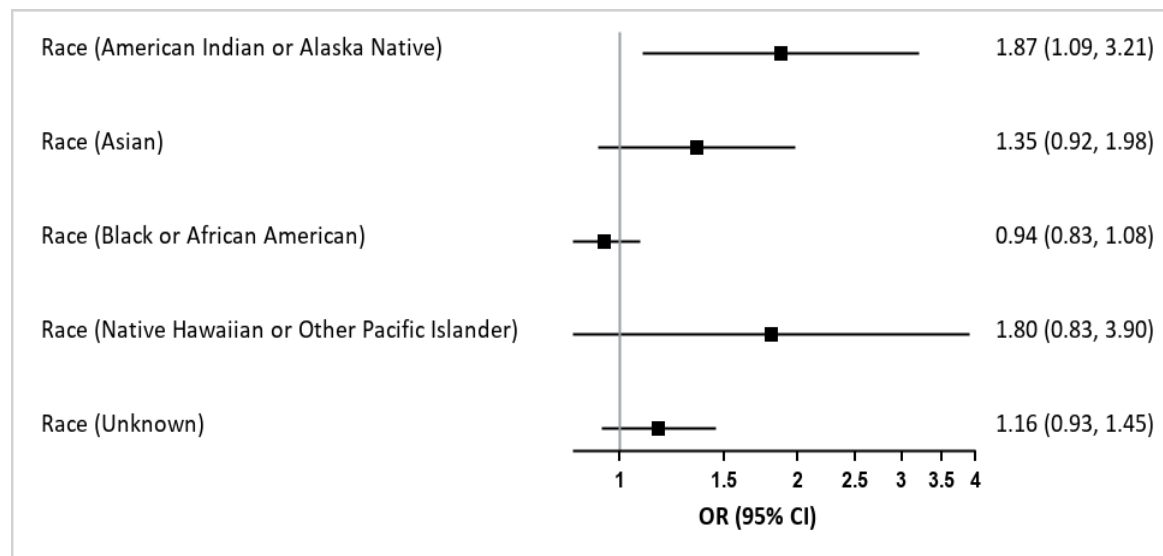
**Figure 31. Forest Plot for the Adjusted Association Between Race and Critical COVID-19 Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



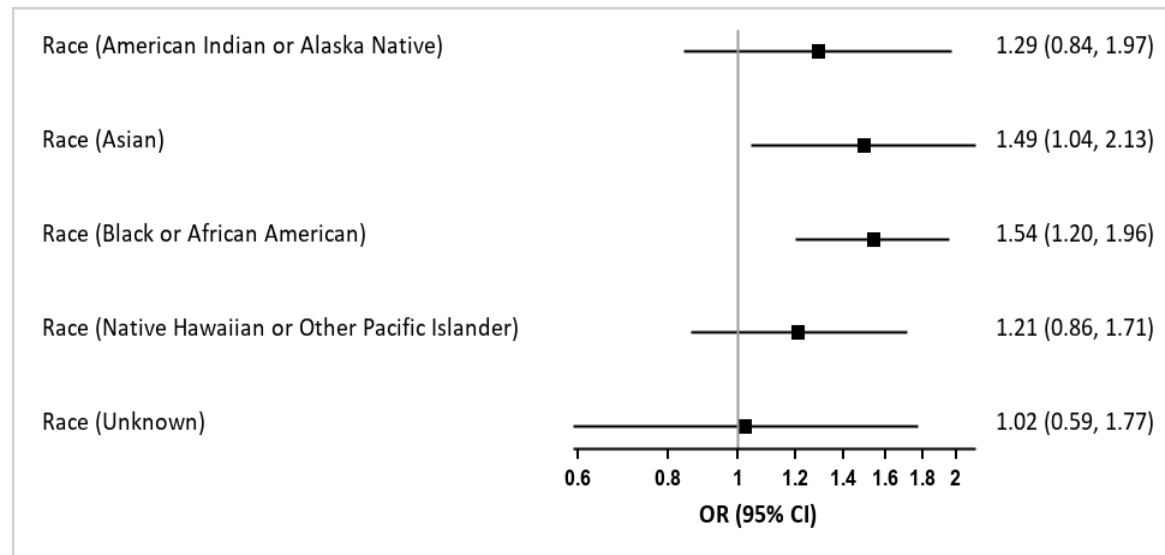
**Figure 32. Forest Plot for the Adjusted Association Between Race and Inpatient Death Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Figure 33. Forest Plot for the Adjusted Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among Those Less Than 65 Years of Age in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

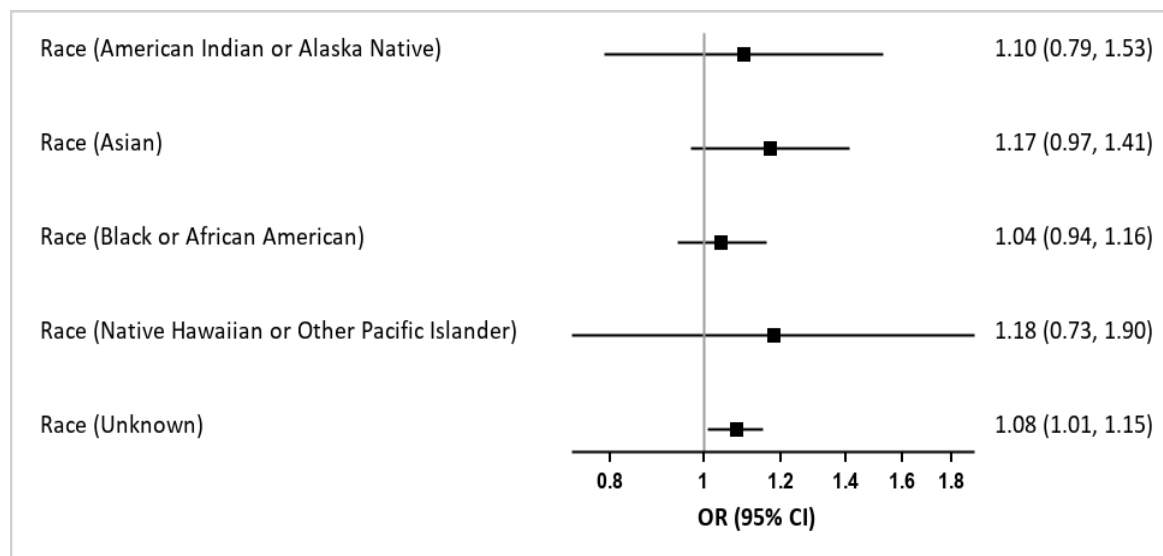


**Figure 34. Forest Plot for the Adjusted Association Between Race and Non-Critical COVID-19 Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**

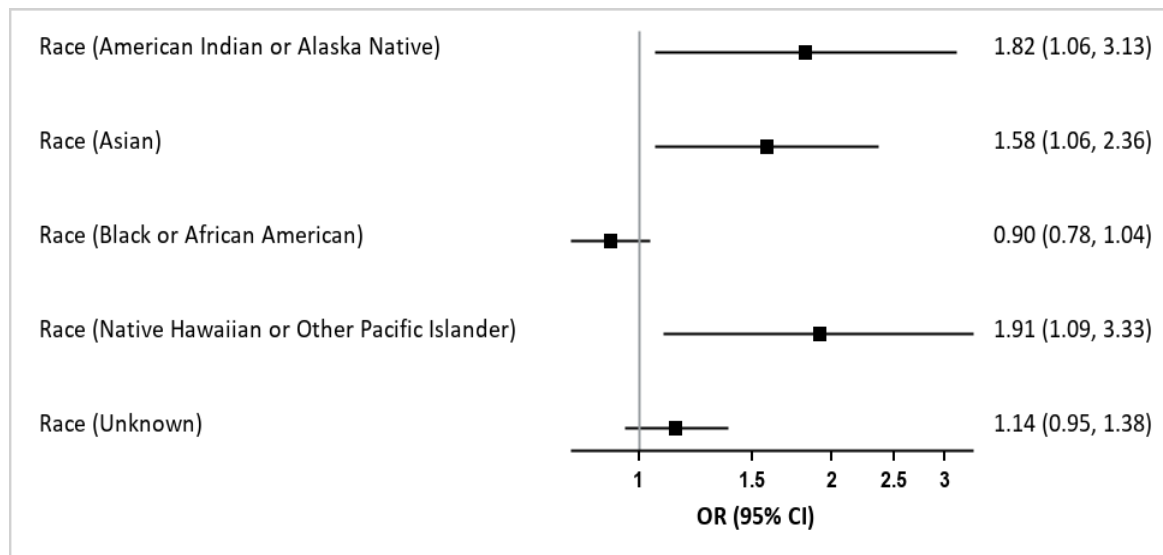




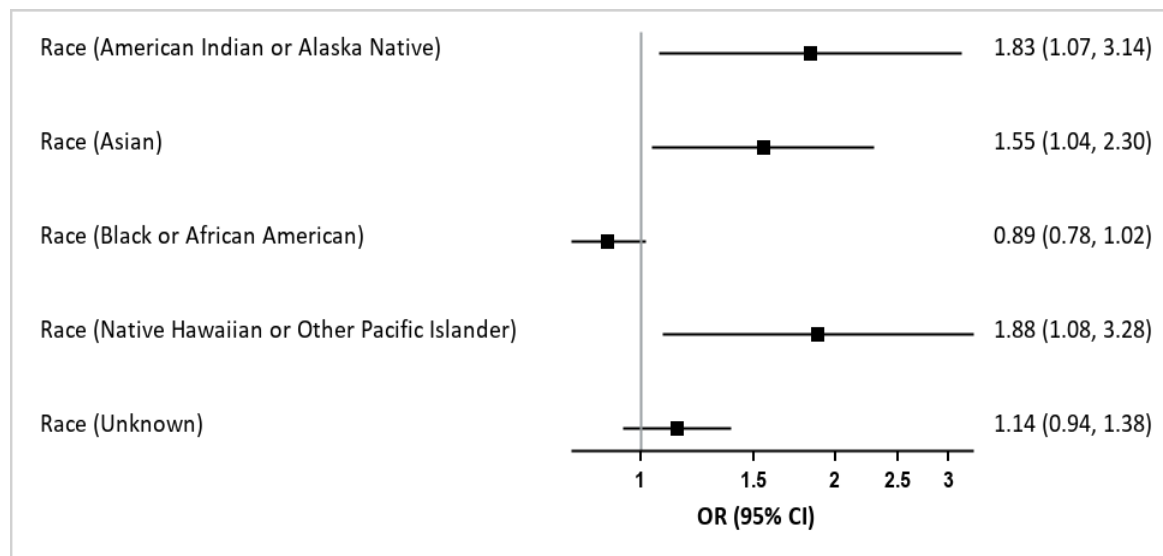
**Figure 35. Forest Plot for the Adjusted Association Between Race and Critical COVID-19 Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Figure 36. Forest Plot for the Adjusted Association Between Race and Inpatient Death Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Figure 37. Forest Plot for the Adjusted Association Between Race and Death (Defined Using the Death Table or Encounter Table) Among Those Less Than 65 Years of Age with All Socioeconomic Status Indicators Available in the Sentinel Distributed Database (SDD) from April 1, 2020 to March 31, 2021**



**Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request Distribution Date (July 11, 2022)**

<b>DP ID</b>	<b>DP Start Date</b>	<b>DP End Date<sup>1</sup></b>
DP01	07/01/2017	04/30/2022
DP02	01/01/2017	09/30/2021
DP03	07/01/2017	02/28/2022

<sup>1</sup>End Date represents the earliest of: (1) query end date, or (2) last day of the most recent month for which all of a Data Partner's data tables (enrollment, dispensing, etc.) have at least 80% of the record count relative to the prior month.

**Appendix B. List of States and Territories Included in Each Census Bureau Region**

Census Bureau Region	States and Territories
Northeast	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, Pennsylvania
Midwest	Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
South	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, Texas
West	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Washington, Oregon
Other	Northern Mariana Islands, Marshall Islands, Puerto Rico, US Virgin Islands, American Samoa, Micronesia, Guam, Palau
Missing	Missing
Invalid	Recorded geographic location does not match any identifiers per the Sentinel Common Data Model

**Appendix C. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Exposures in this Request**

Code	Description	Code Category	Code Type
<b>COVID-19 Diagnosis</b>			
U07.1	COVID-19, virus identified [code effective April 1, 2020]	Diagnosis	ICD-10-CM

**Appendix D. List of Logical Observation Identifiers Names and Codes (LOINC) for SARS-CoV-2 Polymerase Chain Reaction (PCR) Tests Used to Define Exposures in this Request**

LOINC	Description	Test type <sup>1</sup>	Amplification type
<b>SARS-CoV-2 PCR Test</b>			
94307-6	SARS-CoV-2 (COVID-19) N gene [Presence] in Specimen by Nucleic acid amplification using CDC primer-probe set N1	NAAT	PCR
94308-4	SARS-CoV-2 (COVID-19) N gene [Presence] in Specimen by Nucleic acid amplification using CDC primer-probe set N2	NAAT	PCR
94309-2	SARS-CoV-2 (COVID-19) RNA [Presence] in Specimen by NAA with probe detection	NAAT	PCR
94314-2	SARS-CoV-2 (COVID-19) RdRp gene [Presence] in Specimen by NAA with probe detection	NAAT	PCR
94316-7	SARS-CoV-2 (COVID-19) N gene [Presence] in Specimen by NAA with probe detection	NAAT	PCR
94500-6	SARS-CoV-2 (COVID-19) RNA [Presence] in Respiratory specimen by NAA with probe detection	NAAT	PCR
94533-7	SARS-CoV-2 (COVID-19) N gene [Presence] in Respiratory specimen by NAA with probe detection	NAAT	PCR
94534-5	SARS-CoV-2 (COVID-19) RdRp gene [Presence] in Respiratory specimen by NAA with probe detection	NAAT	PCR
94559-2	SARS-CoV-2 (COVID-19) ORF1ab region [Presence] in Respiratory specimen by NAA with probe detection	NAAT	PCR
94565-9	SARS-CoV-2 (COVID-19) RNA [Presence] in Nasopharynx by NAA with non-probe detection	NAAT	PCR
94639-2	SARS-CoV-2 (COVID-19) ORF1ab region [Presence] in Specimen by NAA with probe detection	NAAT	PCR
94640-0	SARS-CoV-2 (COVID-19) S gene [Presence] in Respiratory specimen by NAA with probe detection	NAAT	PCR
94641-8	SARS-CoV-2 (COVID-19) S gene [Presence] in Specimen by NAA with probe detection	NAAT	PCR
94660-8	SARS-CoV-2 (COVID-19) RNA [Presence] in Serum or Plasma by NAA with probe detection	NAAT	PCR
94756-4	SARS-CoV-2 (COVID-19) N gene [Presence] in Respiratory specimen by Nucleic acid amplification using CDC primer-probe set N1	NAAT	PCR
94757-2	SARS-CoV-2 (COVID-19) N gene [Presence] in Respiratory specimen by Nucleic acid amplification using CDC primer-probe set N2	NAAT	PCR
94759-8	SARS-CoV-2 (COVID-19) RNA [Presence] in Nasopharynx by NAA with probe detection	NAAT	PCR
94760-6	SARS-CoV-2 (COVID-19) N gene [Presence] in Nasopharynx by NAA with probe detection	NAAT	PCR

**Appendix D. List of Logical Observation Identifiers Names and Codes (LOINC) for SARS-CoV-2 Polymerase Chain Reaction (PCR) Tests Used to Define Exposures in this Request**

LOINC	Description	Test type <sup>1</sup>	Amplification type
94766-3	SARS-CoV-2 (COVID-19) N gene [Presence] in Serum or Plasma by NAA with probe detection	NAAT	PCR
94767-1	SARS-CoV-2 (COVID-19) S gene [Presence] in Serum or Plasma by NAA with probe detection	NAAT	PCR
94845-5	SARS-CoV-2 (COVID-19) RNA [Presence] in Saliva (oral fluid) by NAA with probe detection	NAAT	PCR
95406-5	SARS-CoV-2 (COVID-19) RNA [Presence] in Nose by NAA with probe detection	NAAT	PCR
95409-9	SARS-CoV-2 (COVID-19) N gene [Presence] in Nose by NAA with probe detection	NAAT	PCR
95423-0	Influenza virus A and B and SARS-CoV-2 (COVID-19) identified in Respiratory specimen by NAA with probe detection	NAAT	PCR
95425-5	SARS-CoV-2 (COVID-19) N gene [Presence] in Saliva (oral fluid) by NAA with probe detection	NAAT	PCR
95608-6	SARS-CoV-2 (COVID-19) RNA [Presence] in Respiratory specimen by NAA with non-probe detection	NAAT	PCR
95824-9	SARS-CoV-2 (COVID-19) ORF1ab region [Presence] in Saliva (oral fluid) by NAA with probe detection	NAAT	PCR
96091-4	SARS-CoV-2 (COVID-19) RdRp gene [Presence] in Saliva (oral fluid) by NAA with probe detection	NAAT	PCR
96120-1	SARS-CoV-2 (COVID-19) RdRp gene [Presence] in Lower respiratory specimen by NAA with probe detection	NAAT	PCR
96123-5	SARS-CoV-2 (COVID-19) RdRp gene [Presence] in Upper respiratory specimen by NAA with probe detection	NAAT	PCR
96448-6	SARS-CoV-2 (COVID-19) N gene [Presence] in Saliva (oral fluid) by Nucleic acid amplification using CDC primer-probe set N1	NAAT	PCR
96765-3	SARS-CoV-2 (COVID-19) S gene [Presence] in Saliva (oral fluid) by NAA with probe detection	NAAT	PCR
96797-6	SARS-CoV-2 (COVID-19) RNA [Presence] in Oropharyngeal wash by NAA with probe detection	NAAT	PCR
96829-7	SARS-CoV-2 (COVID-19) RNA [Presence] in Specimen from Donor by NAA with probe detection	NAAT	PCR
96957-6	SARS-CoV-2 (COVID-19) M gene [Presence] in Upper respiratory specimen by NAA with probe detection	NAAT	PCR
96958-4	SARS-CoV-2 (COVID-19) N gene [Presence] in Saliva (oral fluid) by Nucleic acid amplification using CDC primer-probe set N2	NAAT	PCR



**Appendix D. List of Logical Observation Identifiers Names and Codes (LOINC) for SARS-CoV-2 Polymerase Chain Reaction (PCR) Tests Used to Define Exposures in this Request**

<b>LOINC</b>	<b>Description</b>	<b>Test type<sup>1</sup></b>	<b>Amplification type</b>
96986-5	SARS-CoV-2 (COVID-19) N gene [Presence] in Nose by NAA with non-probe detection	NAAT	PCR
97098-8	SARS-CoV-2 (COVID-19) Nsp2 gene [Presence] in Upper respiratory specimen by NAA with probe detection	NAAT	PCR
98131-6	SARS-CoV-2 (COVID-19) ORF1b region [Presence] in Respiratory specimen by NAA with probe detection	NAAT	PCR
98132-4	SARS-CoV-2 (COVID-19) ORF1a region [Presence] in Respiratory specimen by NAA with probe detection	NAAT	PCR
98493-0	SARS-CoV-2 (COVID-19) ORF1b region [Presence] in Saliva (oral fluid) by NAA with probe detection	NAAT	PCR
98494-8	SARS-CoV-2 (COVID-19) ORF1a region [Presence] in Saliva (oral fluid) by NAA with probe detection	NAAT	PCR

<sup>1</sup>NAAT = nucleic acid amplification test

**Appendix E. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Outcomes in this Request**

Code	Description	Code Category	Code Type
<b>COVID-19 Diagnosis</b>			
U07.1	COVID-19, virus identified [code effective April 1, 2020]	Diagnosis	ICD-10-CM
<b>Intubation and Mechanical Ventilation</b>			
09HN7BZ	Insertion of Airway into Nasopharynx, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
09HN8BZ	Insertion of Airway into Nasopharynx, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0BH13EZ	Insertion of Endotracheal Airway into Trachea, Percutaneous Approach	Procedure	ICD-10-PCS
0BH17EZ	Insertion of Endotracheal Airway into Trachea, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0BH18EZ	Insertion of Endotracheal Airway into Trachea, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0CHY7BZ	Insertion of Airway into Mouth and Throat, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0CHY8BZ	Insertion of Airway into Mouth and Throat, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0DH57BZ	Insertion of Airway into Esophagus, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0DH58BZ	Insertion of Airway into Esophagus, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0WHQ73Z	Insertion of Infusion Device into Respiratory Tract, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0WHQ7YZ	Insertion of Other Device into Respiratory Tract, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
31500	Intubation, endotracheal, emergency procedure	Procedure	CPT-4
4168F	Patient receiving care in the intensive care unit (ICU) and receiving mechanical ventilation, 24 hours or less (CRIT)	Procedure	CPT-2
5A09357	Assistance with Respiratory Ventilation, Less than 24 Consecutive Hours, Continuous Positive Airway Pressure	Procedure	ICD-10-PCS
5A09457	Assistance with Respiratory Ventilation, 24-96 Consecutive Hours, Continuous Positive Airway Pressure	Procedure	ICD-10-PCS
5A09557	Assistance with Respiratory Ventilation, Greater than 96 Consecutive Hours, Continuous Positive Airway Pressure	Procedure	ICD-10-PCS
5A1935Z	Respiratory Ventilation, Less than 24 Consecutive Hours	Procedure	ICD-10-PCS
5A1945Z	Respiratory Ventilation, 24-96 Consecutive Hours	Procedure	ICD-10-PCS
5A1955Z	Respiratory Ventilation, Greater than 96 Consecutive Hours	Procedure	ICD-10-PCS
91000	Esophageal intubation and collection of washings for cytology, including preparation of specimens (separate procedure)	Procedure	CPT-4
94002	Ventilation assist and management, initiation of pressure or volume preset ventilators for assisted or controlled breathing; hospital inpatient/observation, initial day	Procedure	CPT-4
94003	Ventilation assist and management, initiation of pressure or volume preset ventilators for assisted or controlled breathing; hospital inpatient/observation, each subsequent day	Procedure	CPT-4
94004	Ventilation assist and management, initiation of pressure or volume preset ventilators for assisted or controlled breathing; nursing facility, per day	Procedure	CPT-4
94656	Ventilation assist and management, initiation of pressure or volume preset ventilators for assisted or controlled breathing; first day	Procedure	CPT-4
94657	Ventilation assist and management, initiation of pressure or volume preset ventilators for assisted or controlled breathing; subsequent days	Procedure	CPT-4

**Appendix E. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Outcomes in this Request**

Code	Description	Code	
		Category	Code Type
94662	Continuous negative pressure ventilation (CNP), initiation and management	Procedure	CPT-4
A0396	ALS specialized service disposable supplies; esophageal intubation	Procedure	HCPCS
A4483	Moisture exchanger, disposable, for use with invasive mechanical ventilation	Procedure	HCPCS
E0481	Intrapulmonary percussive ventilation system and related accessories	Procedure	HCPCS
<b>Intensive Care Unit (ICU) Admission</b>			
0188T	Remote real-time interactive video-conferenced critical care, evaluation and management of the critically ill or critically injured patient; first 30-74 minutes	Procedure	CPT-3
0189T	Remote real-time interactive video-conferenced critical care, evaluation and management of the critically ill or critically injured patient; each additional 30 minutes (List separately in addition to code for primary service)	Procedure	CPT-3
0581F	Patient transferred directly from anesthetizing location to critical care unit (Peri2)	Procedure	CPT-2
200	ICU general	Procedure	RE
201	ICU surgical	Procedure	RE
202	ICU medical	Procedure	RE
203	ICU pediatric	Procedure	RE
204	ICU psychiatric stay	Procedure	RE
206	ICU intermediate	Procedure	RE
207	ICU burn care	Procedure	RE
208	ICU trauma	Procedure	RE
209	ICU other	Procedure	RE
210	CCU	Procedure	RE
211	CCU myo infarc	Procedure	RE
212	CCU pulmonary	Procedure	RE
213	CCU transplant	Procedure	RE
214	CCU intermediate	Procedure	RE
219	CCU other	Procedure	RE
99160	Critical Care, Initial, Including The Diagnostic And Therapeutic Services And Direction Of Care Of The Critically Ill Or Multiply Injured Or Comatose Patient, Requiring The Prolonged Presence Of The Physician; First Hour	Procedure	CPT-4
99162	Critical Care, Initial, Including The Diagnostic And Therapeutic Services And Direction Of Care Of The Critically Ill Or Multiply Injured Or Comatose Patient, Requiring The Prolonged Presence Of The Physician; Each Additional 30 Minutes	Procedure	CPT-4
99171	Critical Care, Subsequent Follow-up Visit; Brief Examination, Evaluation And/or Treatment For Same Illness	Procedure	CPT-4
99289	Critical care services delivered by a physician, face-to-face, during an interfacility transport of critically ill or critically injured pediatric patient, 24 months of age or less; first 30-74 minutes of hands on care during transport	Procedure	CPT-4
99290	Critical care services delivered by a physician, face-to-face, during an interfacility transport of critically ill or critically injured pediatric patient, 24 months of age or less; each additional 30 minutes (List separately in addition to code for primary service)	Procedure	CPT-4

**Appendix E. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Outcomes in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
99291	Critical care, evaluation and management of the critically ill or critically injured patient; first 30-74 minutes	Procedure	CPT-4
99292	Critical care, evaluation and management of the critically ill or critically injured patient; each additional 30 minutes (List separately in addition to code for primary service)	Procedure	CPT-4
99293	Initial inpatient pediatric critical care, per day, for the evaluation and management of a critically ill infant or young child, 29 days through 24 months of age	Procedure	CPT-4
99294	Subsequent inpatient pediatric critical care, per day, for the evaluation and management of a critically ill infant or young child, 29 days through 24 months of age	Procedure	CPT-4
99295	Initial inpatient neonatal critical care, per day, for the evaluation and management of a critically ill neonate, 28 days of age or less	Procedure	CPT-4
99296	Subsequent inpatient neonatal critical care, per day, for the evaluation and management of a critically ill neonate, 28 days of age or less	Procedure	CPT-4
99466	Critical care face-to-face services, during an interfacility transport of critically ill or critically injured pediatric patient, 24 months of age or younger; first 30-74 minutes of hands-on care during transport	Procedure	CPT-4
99467	Critical care face-to-face services, during an interfacility transport of critically ill or critically injured pediatric patient, 24 months of age or younger; each additional 30 minutes (List separately in addition to code for primary service)	Procedure	CPT-4
99468	Initial inpatient neonatal critical care, per day, for the evaluation and management of a critically ill neonate, 28 days of age or younger	Procedure	CPT-4
99469	Subsequent inpatient neonatal critical care, per day, for the evaluation and management of a critically ill neonate, 28 days of age or younger	Procedure	CPT-4
99471	Initial inpatient pediatric critical care, per day, for the evaluation and management of a critically ill infant or young child, 29 days through 24 months of age	Procedure	CPT-4
99472	Subsequent inpatient pediatric critical care, per day, for the evaluation and management of a critically ill infant or young child, 29 days through 24 months of age	Procedure	CPT-4
99475	Initial inpatient pediatric critical care, per day, for the evaluation and management of a critically ill infant or young child, 2 through 5 years of age	Procedure	CPT-4
99476	Subsequent inpatient pediatric critical care, per day, for the evaluation and management of a critically ill infant or young child, 2 through 5 years of age	Procedure	CPT-4
99477	Initial hospital care, per day, for the evaluation and management of the neonate, 28 days of age or younger, who requires intensive observation, frequent interventions, and other intensive care services	Procedure	CPT-4
99478	Subsequent intensive care, per day, for the evaluation and management of the recovering very low birth weight infant (present body weight less than 1500 grams)	Procedure	CPT-4
99479	Subsequent intensive care, per day, for the evaluation and management of the recovering low birth weight infant (present body weight of 1500-2500 grams)	Procedure	CPT-4
99480	Subsequent intensive care, per day, for the evaluation and management of the recovering infant (present body weight of 2501-5000 grams)	Procedure	CPT-4

**Appendix E. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Outcomes in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
99485	Supervision by a control physician of interfacility transport care of the critically ill or critically injured pediatric patient, 24 months of age or younger, includes two-way communication with transport team before transport, at the referring facility and during the transport, including data interpretation and report; first 30 minutes	Procedure	CPT-4
99486	Supervision by a control physician of interfacility transport care of the critically ill or critically injured pediatric patient, 24 months of age or younger, includes two-way communication with transport team before transport, at the referring facility and during the transport, including data interpretation and report; each additional 30 minutes (List separately in addition to code for primary procedure)	Procedure	CPT-4
G0240	Critical care service delivered by a physician, face to face; during interfacility transport of a critically ill or critically injured patient; first 30-74 minutes of active transport	Procedure	HCPCS
G0390	Trauma response team associated with hospital critical care service	Procedure	HCPCS
G0508	Telehealth consultation, critical care, initial, physicians typically spend 60 minutes communicating with the patient and providers via telehealth	Procedure	HCPCS
G0509	Telehealth consultation, critical care, subsequent, physicians typically spend 50 minutes communicating with the patient and providers via telehealth	Procedure	HCPCS
<b>Extracorporeal Membrane Oxygenation (ECMO)</b>			
33946	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; initiation, veno-venous	Procedure	CPT-4
33947	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; initiation, veno-arterial	Procedure	CPT-4
33948	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; daily management, each day, veno-venous	Procedure	CPT-4
33949	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; daily management, each day, veno-arterial	Procedure	CPT-4
33951	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; insertion of peripheral (arterial and/or venous) cannula(e), percutaneous, birth through 5 years of age (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33952	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; insertion of peripheral (arterial and/or venous) cannula(e), percutaneous, 6 years and older (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33953	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; insertion of peripheral (arterial and/or venous) cannula(e), open, birth through 5 years of age	Procedure	CPT-4
33954	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; insertion of peripheral (arterial and/or venous) cannula(e), open, 6 years and older	Procedure	CPT-4
33955	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; insertion of central cannula(e) by sternotomy or thoracotomy, birth through 5 years of age	Procedure	CPT-4

**Appendix E. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Outcomes in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
33956	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; insertion of central cannula(e) by sternotomy or thoracotomy, 6 years and older	Procedure	CPT-4
33957	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; reposition peripheral (arterial and/or venous) cannula(e), percutaneous, birth through 5 years of age (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33958	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; reposition peripheral (arterial and/or venous) cannula(e), percutaneous, 6 years and older (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33959	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; reposition peripheral (arterial and/or venous) cannula(e), open, birth through 5 years of age (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33962	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; reposition peripheral (arterial and/or venous) cannula(e), open, 6 years and older (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33963	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; reposition of central cannula(e) by sternotomy or thoracotomy, birth through 5 years of age (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33964	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; reposition central cannula(e) by sternotomy or thoracotomy, 6 years and older (includes fluoroscopic guidance, when performed)	Procedure	CPT-4
33965	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; removal of peripheral (arterial and/or venous) cannula(e), percutaneous, birth through 5 years of age	Procedure	CPT-4
33966	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; removal of peripheral (arterial and/or venous) cannula(e), percutaneous, 6 years and older	Procedure	CPT-4
33969	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; removal of peripheral (arterial and/or venous) cannula(e), open, birth through 5 years of age	Procedure	CPT-4
33984	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; removal of peripheral (arterial and/or venous) cannula(e), open, 6 years and older	Procedure	CPT-4
33985	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; removal of central cannula(e) by sternotomy or thoracotomy, birth through 5 years of age	Procedure	CPT-4
33986	Extracorporeal membrane oxygenation (ECMO)/extracorporeal life support (ECLS) provided by physician; removal of central cannula(e) by sternotomy or thoracotomy, 6 years and older	Procedure	CPT-4
33987	Arterial exposure with creation of graft conduit (eg, chimney graft) to facilitate arterial perfusion for ECMO/ECLS (List separately in addition to code for primary procedure)	Procedure	CPT-4

**Appendix E. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS), and Revenue (RE) Codes Used to Define Outcomes in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
33988	Insertion of left heart vent by thoracic incision (eg, sternotomy, thoracotomy) for ECMO/ECLS	Procedure	CPT-4
33989	Removal of left heart vent by thoracic incision (eg, sternotomy, thoracotomy) for ECMO/ECLS	Procedure	CPT-4
36822	Insertion of cannula(s) for prolonged extracorporeal circulation for cardiopulmonary insufficiency (ECMO) (separate procedure)	Procedure	CPT-4
5A15223	Extracorporeal Membrane Oxygenation, Continuous	Procedure	ICD-10-PCS
5A1522F	Extracorporeal Oxygenation, Membrane, Central	Procedure	ICD-10-PCS
5A1522G	Extracorporeal Oxygenation, Membrane, Peripheral Veno-arterial	Procedure	ICD-10-PCS
5A1522H	Extracorporeal Oxygenation, Membrane, Peripheral Veno-venous	Procedure	ICD-10-PCS
5A15A2F	Extracorporeal Oxygenation, Membrane, Central, Intraoperative	Procedure	ICD-10-PCS
5A15A2G	Extracorporeal Oxygenation, Membrane, Peripheral Veno-arterial, Intraoperative	Procedure	ICD-10-PCS
5A15A2H	Extracorporeal Oxygenation, Membrane, Peripheral Veno-venous, Intraoperative	Procedure	ICD-10-PCS
<b>Renal Replacement Therapy Diagnosis Codes</b>			
N17.0	ACUTE RENAL FAILURE WITH TUBULAR NECROSIS	Diagnosis	ICD-10-CM
N17.1	ACUTE KIDNEY FAILURE W/ ACUTE CORTICAL NECROSIS	Diagnosis	ICD-10-CM
N17.2	ACUTE KIDNEY FAILURE WITH MEDULLARY NECROSIS	Diagnosis	ICD-10-CM
N17.8	OTHER ACUTE KIDNEY FAILURE	Diagnosis	ICD-10-CM
N17.9	ACUTE KIDNEY FAILURE UNSPECIFIED	Diagnosis	ICD-10-CM
Z99.2	DEPENDENCE ON RENAL DIALYSIS	Diagnosis	ICD-10-CM
<b>Renal Replacement Therapy Procedure Codes</b>			
4052F	Hemodialysis via functioning arteriovenous (AV) fistula (ESRD)	Procedure	CPT-2
4053F	Hemodialysis via functioning arteriovenous (AV) graft (ESRD)	Procedure	CPT-2
4054F	Hemodialysis via catheter (ESRD)	Procedure	CPT-2
90935	Hemodialysis procedure with single evaluation by a physician or other qualified health care professional	Procedure	CPT-4
90937	Hemodialysis procedure requiring repeated evaluation(s) with or without substantial revision of dialysis prescription	Procedure	CPT-4
90941	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90942	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90943	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90944	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90945	Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies), with single evaluation by a physician or other qualified health care professional	Procedure	CPT-4
90947	Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies) requiring repeated evaluations by a physician or other qualified health care professional, with or without substantial revision of dialysis prescription	Procedure	CPT-4
90976	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90977	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90978	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4

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<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
90979	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90982	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90983	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90984	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90985	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90996	Continuous Arteriovenous Hemofiltration (cavh) (per Day)	Procedure	CPT-4
90999	Unlisted dialysis procedure, inpatient or outpatient	Procedure	CPT-4
G0491	Dialysis procedure at a Medicare certified ESRD facility for acute kidney injury without ESRD	Procedure	HCPCS
G0492	Dialysis procedure with single evaluation by a physician or other qualified health care professional for acute kidney injury without ESRD	Procedure	HCPCS
G8075	ESRD patient with documented dialysis dose of URR greater than or equal to 65% (or Kt/V greater than or equal to 1.2)	Procedure	HCPCS
G8076	ESRD patient with documented dialysis dose of URR less than 65% (or Kt/V less than 1.2)	Procedure	HCPCS
G8714	Hemodialysis treatment performed exactly 3 times per week > 90 days	Procedure	HCPCS
G8715	Hemodialysis treatment performed less than 3 times per week or greater than 3 times per week	Procedure	HCPCS
G8727	Patient receiving hemodialysis, peritoneal dialysis or kidney transplantation	Procedure	HCPCS



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Code	Description	Code Category	Code Type
<b>Alcohol Use/Abuse</b>			
F10	Alcohol related disorders	Diagnosis	ICD-10-CM
F10.1	Alcohol abuse	Diagnosis	ICD-10-CM
F10.10	Alcohol abuse, uncomplicated	Diagnosis	ICD-10-CM
F10.11	Alcohol abuse, in remission	Diagnosis	ICD-10-CM
F10.12	Alcohol abuse with intoxication	Diagnosis	ICD-10-CM
F10.120	Alcohol abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F10.121	Alcohol abuse with intoxication delirium	Diagnosis	ICD-10-CM
F10.129	Alcohol abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F10.14	Alcohol abuse with alcohol-induced mood disorder	Diagnosis	ICD-10-CM
F10.15	Alcohol abuse with alcohol-induced psychotic disorder	Diagnosis	ICD-10-CM
F10.150	Alcohol abuse with alcohol-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F10.151	Alcohol abuse with alcohol-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F10.159	Alcohol abuse with alcohol-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F10.18	Alcohol abuse with other alcohol-induced disorders	Diagnosis	ICD-10-CM
F10.180	Alcohol abuse with alcohol-induced anxiety disorder	Diagnosis	ICD-10-CM
F10.181	Alcohol abuse with alcohol-induced sexual dysfunction	Diagnosis	ICD-10-CM
F10.182	Alcohol abuse with alcohol-induced sleep disorder	Diagnosis	ICD-10-CM
F10.188	Alcohol abuse with other alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.19	Alcohol abuse with unspecified alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.2	Alcohol dependence	Diagnosis	ICD-10-CM
F10.20	Alcohol dependence, uncomplicated	Diagnosis	ICD-10-CM
F10.21	Alcohol dependence, in remission	Diagnosis	ICD-10-CM
F10.22	Alcohol dependence with intoxication	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
F10.220	Alcohol dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F10.221	Alcohol dependence with intoxication delirium	Diagnosis	ICD-10-CM
F10.229	Alcohol dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F10.23	Alcohol dependence with withdrawal	Diagnosis	ICD-10-CM
F10.230	Alcohol dependence with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F10.231	Alcohol dependence with withdrawal delirium	Diagnosis	ICD-10-CM
F10.232	Alcohol dependence with withdrawal with perceptual disturbance	Diagnosis	ICD-10-CM
F10.239	Alcohol dependence with withdrawal, unspecified	Diagnosis	ICD-10-CM
F10.24	Alcohol dependence with alcohol-induced mood disorder	Diagnosis	ICD-10-CM
F10.25	Alcohol dependence with alcohol-induced psychotic disorder	Diagnosis	ICD-10-CM
F10.250	Alcohol dependence with alcohol-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F10.251	Alcohol dependence with alcohol-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F10.259	Alcohol dependence with alcohol-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F10.26	Alcohol dependence with alcohol-induced persisting amnestic disorder	Diagnosis	ICD-10-CM
F10.27	Alcohol dependence with alcohol-induced persisting dementia	Diagnosis	ICD-10-CM
F10.28	Alcohol dependence with other alcohol-induced disorders	Diagnosis	ICD-10-CM
F10.280	Alcohol dependence with alcohol-induced anxiety disorder	Diagnosis	ICD-10-CM
F10.281	Alcohol dependence with alcohol-induced sexual dysfunction	Diagnosis	ICD-10-CM
F10.282	Alcohol dependence with alcohol-induced sleep disorder	Diagnosis	ICD-10-CM
F10.288	Alcohol dependence with other alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.29	Alcohol dependence with unspecified alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.9	Alcohol use, unspecified	Diagnosis	ICD-10-CM
F10.92	Alcohol use, unspecified with intoxication	Diagnosis	ICD-10-CM
F10.920	Alcohol use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
F10.921	Alcohol use, unspecified with intoxication delirium	Diagnosis	ICD-10-CM
F10.929	Alcohol use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F10.94	Alcohol use, unspecified with alcohol-induced mood disorder	Diagnosis	ICD-10-CM
F10.95	Alcohol use, unspecified with alcohol-induced psychotic disorder	Diagnosis	ICD-10-CM
F10.950	Alcohol use, unspecified with alcohol-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F10.951	Alcohol use, unspecified with alcohol-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F10.959	Alcohol use, unspecified with alcohol-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F10.96	Alcohol use, unspecified with alcohol-induced persisting amnestic disorder	Diagnosis	ICD-10-CM
F10.97	Alcohol use, unspecified with alcohol-induced persisting dementia	Diagnosis	ICD-10-CM
F10.98	Alcohol use, unspecified with other alcohol-induced disorders	Diagnosis	ICD-10-CM
F10.980	Alcohol use, unspecified with alcohol-induced anxiety disorder	Diagnosis	ICD-10-CM
F10.981	Alcohol use, unspecified with alcohol-induced sexual dysfunction	Diagnosis	ICD-10-CM
F10.982	Alcohol use, unspecified with alcohol-induced sleep disorder	Diagnosis	ICD-10-CM
F10.988	Alcohol use, unspecified with other alcohol-induced disorder	Diagnosis	ICD-10-CM
F10.99	Alcohol use, unspecified with unspecified alcohol-induced disorder	Diagnosis	ICD-10-CM
G62.1	Alcoholic polyneuropathy	Diagnosis	ICD-10-CM
HZ2ZZZZ	Detoxification Services for Substance Abuse Treatment	Procedure	ICD-10-PCS
HZ30ZZZ	Individual Counseling for Substance Abuse Treatment, Cognitive	Procedure	ICD-10-PCS
HZ31ZZZ	Individual Counseling for Substance Abuse Treatment, Behavioral	Procedure	ICD-10-PCS
HZ32ZZZ	Individual Counseling for Substance Abuse Treatment, Cognitive-Behavioral	Procedure	ICD-10-PCS
HZ33ZZZ	Individual Counseling for Substance Abuse Treatment, 12-Step	Procedure	ICD-10-PCS
HZ34ZZZ	Individual Counseling for Substance Abuse Treatment, Interpersonal	Procedure	ICD-10-PCS
HZ35ZZZ	Individual Counseling for Substance Abuse Treatment, Vocational	Procedure	ICD-10-PCS
HZ36ZZZ	Individual Counseling for Substance Abuse Treatment, Psychoeducation	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
HZ37ZZZ	Individual Counseling for Substance Abuse Treatment, Motivational Enhancement	Procedure	ICD-10-PCS
HZ38ZZZ	Individual Counseling for Substance Abuse Treatment, Confrontational	Procedure	ICD-10-PCS
HZ39ZZZ	Individual Counseling for Substance Abuse Treatment, Continuing Care	Procedure	ICD-10-PCS
HZ3BZZZ	Individual Counseling for Substance Abuse Treatment, Spiritual	Procedure	ICD-10-PCS
HZ40ZZZ	Group Counseling for Substance Abuse Treatment, Cognitive	Procedure	ICD-10-PCS
HZ41ZZZ	Group Counseling for Substance Abuse Treatment, Behavioral	Procedure	ICD-10-PCS
HZ42ZZZ	Group Counseling for Substance Abuse Treatment, Cognitive-Behavioral	Procedure	ICD-10-PCS
HZ43ZZZ	Group Counseling for Substance Abuse Treatment, 12-Step	Procedure	ICD-10-PCS
HZ44ZZZ	Group Counseling for Substance Abuse Treatment, Interpersonal	Procedure	ICD-10-PCS
HZ45ZZZ	Group Counseling for Substance Abuse Treatment, Vocational	Procedure	ICD-10-PCS
HZ46ZZZ	Group Counseling for Substance Abuse Treatment, Psychoeducation	Procedure	ICD-10-PCS
HZ47ZZZ	Group Counseling for Substance Abuse Treatment, Motivational Enhancement	Procedure	ICD-10-PCS
HZ48ZZZ	Group Counseling for Substance Abuse Treatment, Confrontational	Procedure	ICD-10-PCS
HZ49ZZZ	Group Counseling for Substance Abuse Treatment, Continuing Care	Procedure	ICD-10-PCS
HZ4BZZZ	Group Counseling for Substance Abuse Treatment, Spiritual	Procedure	ICD-10-PCS
HZ50ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Cognitive	Procedure	ICD-10-PCS
HZ51ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Behavioral	Procedure	ICD-10-PCS
HZ52ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Cognitive-Behavioral	Procedure	ICD-10-PCS
HZ53ZZZ	Individual Psychotherapy for Substance Abuse Treatment, 12-Step	Procedure	ICD-10-PCS
HZ54ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Interpersonal	Procedure	ICD-10-PCS
HZ55ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Interactive	Procedure	ICD-10-PCS
HZ56ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychoeducation	Procedure	ICD-10-PCS
HZ57ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Motivational Enhancement	Procedure	ICD-10-PCS
HZ58ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Confrontational	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
HZ59ZZZ	Individual Psychotherapy for Substance Abuse Treatment, Supportive	Procedure	ICD-10-PCS
HZ5BZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychoanalysis	Procedure	ICD-10-PCS
HZ5CZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychodynamic	Procedure	ICD-10-PCS
HZ5DZZZ	Individual Psychotherapy for Substance Abuse Treatment, Psychophysiological	Procedure	ICD-10-PCS
HZ63ZZZ	Family Counseling for Substance Abuse Treatment	Procedure	ICD-10-PCS
HZ83ZZZ	Medication Management for Substance Abuse Treatment, Antabuse	Procedure	ICD-10-PCS
HZ86ZZZ	Medication Management for Substance Abuse Treatment, Clonidine	Procedure	ICD-10-PCS
HZ88ZZZ	Medication Management for Substance Abuse Treatment, Psychiatric Medication	Procedure	ICD-10-PCS
HZ89ZZZ	Medication Management for Substance Abuse Treatment, Other Replacement Medication	Procedure	ICD-10-PCS
HZ93ZZZ	Pharmacotherapy for Substance Abuse Treatment, Antabuse	Procedure	ICD-10-PCS
HZ96ZZZ	Pharmacotherapy for Substance Abuse Treatment, Clonidine	Procedure	ICD-10-PCS
HZ98ZZZ	Pharmacotherapy for Substance Abuse Treatment, Psychiatric Medication	Procedure	ICD-10-PCS
HZ99ZZZ	Pharmacotherapy for Substance Abuse Treatment, Other Replacement Medication	Procedure	ICD-10-PCS
I42.6	Alcoholic cardiomyopathy	Diagnosis	ICD-10-CM
K29.2	Alcoholic gastritis	Diagnosis	ICD-10-CM
K29.20	Alcoholic gastritis without bleeding	Diagnosis	ICD-10-CM
K29.21	Alcoholic gastritis with bleeding	Diagnosis	ICD-10-CM
K70.0	Alcoholic fatty liver	Diagnosis	ICD-10-CM
K70.10	Alcoholic hepatitis without ascites	Diagnosis	ICD-10-CM
K70.11	Alcoholic hepatitis with ascites	Diagnosis	ICD-10-CM
K70.2	Alcoholic fibrosis and sclerosis of liver	Diagnosis	ICD-10-CM
K70.3	Alcoholic cirrhosis of liver	Diagnosis	ICD-10-CM
K70.30	Alcoholic cirrhosis of liver without ascites	Diagnosis	ICD-10-CM
K70.31	Alcoholic cirrhosis of liver with ascites	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
K70.40	Alcoholic hepatic failure without coma	Diagnosis	ICD-10-CM
K70.41	Alcoholic hepatic failure with coma	Diagnosis	ICD-10-CM
K70.9	Alcoholic liver disease, unspecified	Diagnosis	ICD-10-CM
R78.0	Finding of alcohol in blood	Diagnosis	ICD-10-CM
T51	Toxic effect of alcohol	Diagnosis	ICD-10-CM
T51.0	Toxic effect of ethanol	Diagnosis	ICD-10-CM
T51.0X	Toxic effect of ethanol	Diagnosis	ICD-10-CM
T51.0X1	Toxic effect of ethanol, accidental (unintentional)	Diagnosis	ICD-10-CM
T51.0X1A	Toxic effect of ethanol, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T51.0X1D	Toxic effect of ethanol, accidental (unintentional), subsequent encounter	Diagnosis	ICD-10-CM
T51.0X1S	Toxic effect of ethanol, accidental (unintentional), sequela	Diagnosis	ICD-10-CM
T51.0X2	Toxic effect of ethanol, intentional self-harm	Diagnosis	ICD-10-CM
T51.0X2A	Toxic effect of ethanol, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T51.0X2D	Toxic effect of ethanol, intentional self-harm, subsequent encounter	Diagnosis	ICD-10-CM
T51.0X2S	Toxic effect of ethanol, intentional self-harm, sequela	Diagnosis	ICD-10-CM
T51.0X3	Toxic effect of ethanol, assault	Diagnosis	ICD-10-CM
T51.0X3A	Toxic effect of ethanol, assault, initial encounter	Diagnosis	ICD-10-CM
T51.0X3D	Toxic effect of ethanol, assault, subsequent encounter	Diagnosis	ICD-10-CM
T51.0X3S	Toxic effect of ethanol, assault, sequela	Diagnosis	ICD-10-CM
T51.0X4	Toxic effect of ethanol, undetermined	Diagnosis	ICD-10-CM
T51.0X4A	Toxic effect of ethanol, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.0X4D	Toxic effect of ethanol, undetermined, subsequent encounter	Diagnosis	ICD-10-CM
T51.0X4S	Toxic effect of ethanol, undetermined, sequela	Diagnosis	ICD-10-CM
T51.8	Toxic effect of other alcohols	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
T51.8X	Toxic effect of other alcohols	Diagnosis	ICD-10-CM
T51.8X1	Toxic effect of other alcohols, accidental (unintentional)	Diagnosis	ICD-10-CM
T51.8X1A	Toxic effect of other alcohols, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T51.8X1D	Toxic effect of other alcohols, accidental (unintentional), subsequent encounter	Diagnosis	ICD-10-CM
T51.8X1S	Toxic effect of other alcohols, accidental (unintentional), sequela	Diagnosis	ICD-10-CM
T51.8X2	Toxic effect of other alcohols, intentional self-harm	Diagnosis	ICD-10-CM
T51.8X2A	Toxic effect of other alcohols, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM
T51.8X2D	Toxic effect of other alcohols, intentional self-harm, subsequent encounter	Diagnosis	ICD-10-CM
T51.8X2S	Toxic effect of other alcohols, intentional self-harm, sequela	Diagnosis	ICD-10-CM
T51.8X3	Toxic effect of other alcohols, assault	Diagnosis	ICD-10-CM
T51.8X3A	Toxic effect of other alcohols, assault, initial encounter	Diagnosis	ICD-10-CM
T51.8X3D	Toxic effect of other alcohols, assault, subsequent encounter	Diagnosis	ICD-10-CM
T51.8X3S	Toxic effect of other alcohols, assault, sequela	Diagnosis	ICD-10-CM
T51.8X4	Toxic effect of other alcohols, undetermined	Diagnosis	ICD-10-CM
T51.8X4A	Toxic effect of other alcohols, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.8X4D	Toxic effect of other alcohols, undetermined, subsequent encounter	Diagnosis	ICD-10-CM
T51.8X4S	Toxic effect of other alcohols, undetermined, sequela	Diagnosis	ICD-10-CM
T51.9	Toxic effect of unspecified alcohol	Diagnosis	ICD-10-CM
T51.91	Toxic effect of unspecified alcohol, accidental (unintentional)	Diagnosis	ICD-10-CM
T51.91XA	Toxic effect of unspecified alcohol, accidental (unintentional), initial encounter	Diagnosis	ICD-10-CM
T51.91XD	Toxic effect of unspecified alcohol, accidental (unintentional), subsequent encounter	Diagnosis	ICD-10-CM
T51.91XS	Toxic effect of unspecified alcohol, accidental (unintentional), sequela	Diagnosis	ICD-10-CM
T51.92	Toxic effect of unspecified alcohol, intentional self-harm	Diagnosis	ICD-10-CM
T51.92XA	Toxic effect of unspecified alcohol, intentional self-harm, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
T51.92XD	Toxic effect of unspecified alcohol, intentional self-harm, subsequent encounter	Diagnosis	ICD-10-CM
T51.92XS	Toxic effect of unspecified alcohol, intentional self-harm, sequela	Diagnosis	ICD-10-CM
T51.93	Toxic effect of unspecified alcohol, assault	Diagnosis	ICD-10-CM
T51.93XA	Toxic effect of unspecified alcohol, assault, initial encounter	Diagnosis	ICD-10-CM
T51.93XD	Toxic effect of unspecified alcohol, assault, subsequent encounter	Diagnosis	ICD-10-CM
T51.93XS	Toxic effect of unspecified alcohol, assault, sequela	Diagnosis	ICD-10-CM
T51.94	Toxic effect of unspecified alcohol, undetermined	Diagnosis	ICD-10-CM
T51.94XA	Toxic effect of unspecified alcohol, undetermined, initial encounter	Diagnosis	ICD-10-CM
T51.94XD	Toxic effect of unspecified alcohol, undetermined, subsequent encounter	Diagnosis	ICD-10-CM
T51.94XS	Toxic effect of unspecified alcohol, undetermined, sequela	Diagnosis	ICD-10-CM
Z65.8	Other specified problems related to psychosocial circumstances	Diagnosis	ICD-10-CM
Z71.4	Alcohol abuse counseling and surveillance	Diagnosis	ICD-10-CM
<b>Asthma</b>			
J45	Asthma	Diagnosis	ICD-10-CM
J45.2	Mild intermittent asthma	Diagnosis	ICD-10-CM
J45.20	Mild intermittent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.21	Mild intermittent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.22	Mild intermittent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.3	Mild persistent asthma	Diagnosis	ICD-10-CM
J45.30	Mild persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.31	Mild persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.32	Mild persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.4	Moderate persistent asthma	Diagnosis	ICD-10-CM
J45.40	Moderate persistent asthma, uncomplicated	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J45.41	Moderate persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.42	Moderate persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.5	Severe persistent asthma	Diagnosis	ICD-10-CM
J45.50	Severe persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.51	Severe persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.52	Severe persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.9	Other and unspecified asthma	Diagnosis	ICD-10-CM
J45.90	Unspecified asthma	Diagnosis	ICD-10-CM
J45.901	Unspecified asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.902	Unspecified asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.909	Unspecified asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.99	Other asthma	Diagnosis	ICD-10-CM
J45.990	Exercise induced bronchospasm	Diagnosis	ICD-10-CM
J45.991	Cough variant asthma	Diagnosis	ICD-10-CM
J45.998	Other asthma	Diagnosis	ICD-10-CM
<b>Autoimmune Conditions</b>			
D51.0	Vitamin B12 deficiency anemia due to intrinsic factor deficiency	Diagnosis	ICD-10-CM
D69.0	Allergic purpura	Diagnosis	ICD-10-CM
D86.0	Sarcoidosis of lung	Diagnosis	ICD-10-CM
D86.1	Sarcoidosis of lymph nodes	Diagnosis	ICD-10-CM
D86.2	Sarcoidosis of lung with sarcoidosis of lymph nodes	Diagnosis	ICD-10-CM
D86.3	Sarcoidosis of skin	Diagnosis	ICD-10-CM
D86.81	Sarcoid meningitis	Diagnosis	ICD-10-CM
D86.82	Multiple cranial nerve palsies in sarcoidosis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
D86.83	Sarcoid iridocyclitis	Diagnosis	ICD-10-CM
D86.84	Sarcoid pyelonephritis	Diagnosis	ICD-10-CM
D86.85	Sarcoid myocarditis	Diagnosis	ICD-10-CM
D86.86	Sarcoid arthropathy	Diagnosis	ICD-10-CM
D86.87	Sarcoid myositis	Diagnosis	ICD-10-CM
D86.89	Sarcoidosis of other sites	Diagnosis	ICD-10-CM
D86.9	Sarcoidosis, unspecified	Diagnosis	ICD-10-CM
E27.1	Primary adrenocortical insufficiency	Diagnosis	ICD-10-CM
E27.2	Addisonian crisis	Diagnosis	ICD-10-CM
E27.3	Drug-induced adrenocortical insufficiency	Diagnosis	ICD-10-CM
E27.40	Unspecified adrenocortical insufficiency	Diagnosis	ICD-10-CM
E27.49	Other adrenocortical insufficiency	Diagnosis	ICD-10-CM
E89.6	Postprocedural adrenocortical (-medullary) hypofunction	Diagnosis	ICD-10-CM
G02	Meningitis in other infectious and parasitic diseases classified elsewhere	Diagnosis	ICD-10-CM
G70	Myasthenia gravis and other myoneural disorders	Diagnosis	ICD-10-CM
G70.0	Myasthenia gravis	Diagnosis	ICD-10-CM
G70.00	Myasthenia gravis without (acute) exacerbation	Diagnosis	ICD-10-CM
G70.01	Myasthenia gravis with (acute) exacerbation	Diagnosis	ICD-10-CM
G73.7	Myopathy in diseases classified elsewhere	Diagnosis	ICD-10-CM
H01.121	Discoid lupus erythematosus of right upper eyelid	Diagnosis	ICD-10-CM
H01.122	Discoid lupus erythematosus of right lower eyelid	Diagnosis	ICD-10-CM
H01.123	Discoid lupus erythematosus of right eye, unspecified eyelid	Diagnosis	ICD-10-CM
H01.124	Discoid lupus erythematosus of left upper eyelid	Diagnosis	ICD-10-CM
H01.125	Discoid lupus erythematosus of left lower eyelid	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
H01.126	Discoid lupus erythematosus of left eye, unspecified eyelid	Diagnosis	ICD-10-CM
H01.129	Discoid lupus erythematosus of unspecified eye, unspecified eyelid	Diagnosis	ICD-10-CM
L93.0	Discoid lupus erythematosus	Diagnosis	ICD-10-CM
L93.1	Subacute cutaneous lupus erythematosus	Diagnosis	ICD-10-CM
L93.2	Other local lupus erythematosus	Diagnosis	ICD-10-CM
L94.0	Localized scleroderma [morphea]	Diagnosis	ICD-10-CM
L94.0	LOCALIZED SCLERODERMA MORPHEA	Diagnosis	ICD-10-CM
L94.1	Linear scleroderma	Diagnosis	ICD-10-CM
L94.1	LINEAR SCLERODERMA	Diagnosis	ICD-10-CM
L94.3	Sclerodactyly	Diagnosis	ICD-10-CM
M05.20	Rheumatoid vasculitis with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.211	Rheumatoid vasculitis with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.212	Rheumatoid vasculitis with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM
M05.219	Rheumatoid vasculitis with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.221	Rheumatoid vasculitis with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.222	Rheumatoid vasculitis with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.229	Rheumatoid vasculitis with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.231	Rheumatoid vasculitis with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.232	Rheumatoid vasculitis with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.239	Rheumatoid vasculitis with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.241	Rheumatoid vasculitis with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.242	Rheumatoid vasculitis with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.249	Rheumatoid vasculitis with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.251	Rheumatoid vasculitis with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M05.252	Rheumatoid vasculitis with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.259	Rheumatoid vasculitis with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.261	Rheumatoid vasculitis with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.262	Rheumatoid vasculitis with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.269	Rheumatoid vasculitis with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.271	Rheumatoid vasculitis with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.272	Rheumatoid vasculitis with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.279	Rheumatoid vasculitis with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.29	Rheumatoid vasculitis with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.30	Rheumatoid heart disease with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.311	Rheumatoid heart disease with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.312	Rheumatoid heart disease with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM
M05.319	Rheumatoid heart disease with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.321	Rheumatoid heart disease with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.322	Rheumatoid heart disease with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.329	Rheumatoid heart disease with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.331	Rheumatoid heart disease with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.332	Rheumatoid heart disease with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.339	Rheumatoid heart disease with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.341	Rheumatoid heart disease with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.342	Rheumatoid heart disease with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.349	Rheumatoid heart disease with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.351	Rheumatoid heart disease with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.352	Rheumatoid heart disease with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M05.359	Rheumatoid heart disease with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.361	Rheumatoid heart disease with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.362	Rheumatoid heart disease with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.369	Rheumatoid heart disease with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.371	Rheumatoid heart disease with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.372	Rheumatoid heart disease with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.379	Rheumatoid heart disease with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.39	Rheumatoid heart disease with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.40	Rheumatoid myopathy with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.411	Rheumatoid myopathy with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.412	Rheumatoid myopathy with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM
M05.419	Rheumatoid myopathy with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.421	Rheumatoid myopathy with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.422	Rheumatoid myopathy with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.429	Rheumatoid myopathy with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.431	Rheumatoid myopathy with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.432	Rheumatoid myopathy with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.439	Rheumatoid myopathy with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.441	Rheumatoid myopathy with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.442	Rheumatoid myopathy with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.449	Rheumatoid myopathy with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.451	Rheumatoid myopathy with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.452	Rheumatoid myopathy with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.459	Rheumatoid myopathy with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M05.461	Rheumatoid myopathy with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM
M05.462	Rheumatoid myopathy with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.469	Rheumatoid myopathy with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.471	Rheumatoid myopathy with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.472	Rheumatoid myopathy with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.479	Rheumatoid myopathy with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.49	Rheumatoid myopathy with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.50	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M05.511	Rheumatoid polyneuropathy with rheumatoid arthritis of right shoulder	Diagnosis	ICD-10-CM
M05.512	Rheumatoid polyneuropathy with rheumatoid arthritis of left shoulder	Diagnosis	ICD-10-CM
M05.519	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified shoulder	Diagnosis	ICD-10-CM
M05.521	Rheumatoid polyneuropathy with rheumatoid arthritis of right elbow	Diagnosis	ICD-10-CM
M05.522	Rheumatoid polyneuropathy with rheumatoid arthritis of left elbow	Diagnosis	ICD-10-CM
M05.529	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified elbow	Diagnosis	ICD-10-CM
M05.531	Rheumatoid polyneuropathy with rheumatoid arthritis of right wrist	Diagnosis	ICD-10-CM
M05.532	Rheumatoid polyneuropathy with rheumatoid arthritis of left wrist	Diagnosis	ICD-10-CM
M05.539	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified wrist	Diagnosis	ICD-10-CM
M05.541	Rheumatoid polyneuropathy with rheumatoid arthritis of right hand	Diagnosis	ICD-10-CM
M05.542	Rheumatoid polyneuropathy with rheumatoid arthritis of left hand	Diagnosis	ICD-10-CM
M05.549	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified hand	Diagnosis	ICD-10-CM
M05.551	Rheumatoid polyneuropathy with rheumatoid arthritis of right hip	Diagnosis	ICD-10-CM
M05.552	Rheumatoid polyneuropathy with rheumatoid arthritis of left hip	Diagnosis	ICD-10-CM
M05.559	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified hip	Diagnosis	ICD-10-CM
M05.561	Rheumatoid polyneuropathy with rheumatoid arthritis of right knee	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M05.562	Rheumatoid polyneuropathy with rheumatoid arthritis of left knee	Diagnosis	ICD-10-CM
M05.569	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified knee	Diagnosis	ICD-10-CM
M05.571	Rheumatoid polyneuropathy with rheumatoid arthritis of right ankle and foot	Diagnosis	ICD-10-CM
M05.572	Rheumatoid polyneuropathy with rheumatoid arthritis of left ankle and foot	Diagnosis	ICD-10-CM
M05.579	Rheumatoid polyneuropathy with rheumatoid arthritis of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.59	Rheumatoid polyneuropathy with rheumatoid arthritis of multiple sites	Diagnosis	ICD-10-CM
M05.60	Rheumatoid arthritis of unspecified site with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.611	Rheumatoid arthritis of right shoulder with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.612	Rheumatoid arthritis of left shoulder with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.619	Rheumatoid arthritis of unspecified shoulder with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.621	Rheumatoid arthritis of right elbow with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.622	Rheumatoid arthritis of left elbow with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.629	Rheumatoid arthritis of unspecified elbow with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.631	Rheumatoid arthritis of right wrist with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.632	Rheumatoid arthritis of left wrist with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.639	Rheumatoid arthritis of unspecified wrist with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.641	Rheumatoid arthritis of right hand with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.642	Rheumatoid arthritis of left hand with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.649	Rheumatoid arthritis of unspecified hand with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.651	Rheumatoid arthritis of right hip with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.652	Rheumatoid arthritis of left hip with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.659	Rheumatoid arthritis of unspecified hip with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.661	Rheumatoid arthritis of right knee with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.662	Rheumatoid arthritis of left knee with involvement of other organs and systems	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M05.669	Rheumatoid arthritis of unspecified knee with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.671	Rheumatoid arthritis of right ankle and foot with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.672	Rheumatoid arthritis of left ankle and foot with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.679	Rheumatoid arthritis of unspecified ankle and foot with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.69	Rheumatoid arthritis of multiple sites with involvement of other organs and systems	Diagnosis	ICD-10-CM
M05.70	Rheumatoid arthritis with rheumatoid factor of unspecified site without organ or systems involvement	Diagnosis	ICD-10-CM
M05.711	Rheumatoid arthritis with rheumatoid factor of right shoulder without organ or systems involvement	Diagnosis	ICD-10-CM
M05.712	Rheumatoid arthritis with rheumatoid factor of left shoulder without organ or systems involvement	Diagnosis	ICD-10-CM
M05.719	Rheumatoid arthritis with rheumatoid factor of unspecified shoulder without organ or systems involvement	Diagnosis	ICD-10-CM
M05.721	Rheumatoid arthritis with rheumatoid factor of right elbow without organ or systems involvement	Diagnosis	ICD-10-CM
M05.722	Rheumatoid arthritis with rheumatoid factor of left elbow without organ or systems involvement	Diagnosis	ICD-10-CM
M05.729	Rheumatoid arthritis with rheumatoid factor of unspecified elbow without organ or systems involvement	Diagnosis	ICD-10-CM
M05.731	Rheumatoid arthritis with rheumatoid factor of right wrist without organ or systems involvement	Diagnosis	ICD-10-CM
M05.732	Rheumatoid arthritis with rheumatoid factor of left wrist without organ or systems involvement	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
M05.739	Rheumatoid arthritis with rheumatoid factor of unspecified wrist without organ or systems involvement	Diagnosis	ICD-10-CM
M05.741	Rheumatoid arthritis with rheumatoid factor of right hand without organ or systems involvement	Diagnosis	ICD-10-CM
M05.742	Rheumatoid arthritis with rheumatoid factor of left hand without organ or systems involvement	Diagnosis	ICD-10-CM
M05.749	Rheumatoid arthritis with rheumatoid factor of unspecified hand without organ or systems involvement	Diagnosis	ICD-10-CM
M05.751	Rheumatoid arthritis with rheumatoid factor of right hip without organ or systems involvement	Diagnosis	ICD-10-CM
M05.752	Rheumatoid arthritis with rheumatoid factor of left hip without organ or systems involvement	Diagnosis	ICD-10-CM
M05.759	Rheumatoid arthritis with rheumatoid factor of unspecified hip without organ or systems involvement	Diagnosis	ICD-10-CM
M05.761	Rheumatoid arthritis with rheumatoid factor of right knee without organ or systems involvement	Diagnosis	ICD-10-CM
M05.762	Rheumatoid arthritis with rheumatoid factor of left knee without organ or systems involvement	Diagnosis	ICD-10-CM
M05.769	Rheumatoid arthritis with rheumatoid factor of unspecified knee without organ or systems involvement	Diagnosis	ICD-10-CM
M05.771	Rheumatoid arthritis with rheumatoid factor of right ankle and foot without organ or systems involvement	Diagnosis	ICD-10-CM
M05.772	Rheumatoid arthritis with rheumatoid factor of left ankle and foot without organ or systems involvement	Diagnosis	ICD-10-CM
M05.779	Rheumatoid arthritis with rheumatoid factor of unspecified ankle and foot without organ or systems involvement	Diagnosis	ICD-10-CM
M05.79	Rheumatoid arthritis with rheumatoid factor of multiple sites without organ or systems involvement	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M05.80	Other rheumatoid arthritis with rheumatoid factor of unspecified site	Diagnosis	ICD-10-CM
M05.811	Other rheumatoid arthritis with rheumatoid factor of right shoulder	Diagnosis	ICD-10-CM
M05.812	Other rheumatoid arthritis with rheumatoid factor of left shoulder	Diagnosis	ICD-10-CM
M05.819	Other rheumatoid arthritis with rheumatoid factor of unspecified shoulder	Diagnosis	ICD-10-CM
M05.821	Other rheumatoid arthritis with rheumatoid factor of right elbow	Diagnosis	ICD-10-CM
M05.822	Other rheumatoid arthritis with rheumatoid factor of left elbow	Diagnosis	ICD-10-CM
M05.829	Other rheumatoid arthritis with rheumatoid factor of unspecified elbow	Diagnosis	ICD-10-CM
M05.831	Other rheumatoid arthritis with rheumatoid factor of right wrist	Diagnosis	ICD-10-CM
M05.832	Other rheumatoid arthritis with rheumatoid factor of left wrist	Diagnosis	ICD-10-CM
M05.839	Other rheumatoid arthritis with rheumatoid factor of unspecified wrist	Diagnosis	ICD-10-CM
M05.841	Other rheumatoid arthritis with rheumatoid factor of right hand	Diagnosis	ICD-10-CM
M05.842	Other rheumatoid arthritis with rheumatoid factor of left hand	Diagnosis	ICD-10-CM
M05.849	Other rheumatoid arthritis with rheumatoid factor of unspecified hand	Diagnosis	ICD-10-CM
M05.851	Other rheumatoid arthritis with rheumatoid factor of right hip	Diagnosis	ICD-10-CM
M05.852	Other rheumatoid arthritis with rheumatoid factor of left hip	Diagnosis	ICD-10-CM
M05.859	Other rheumatoid arthritis with rheumatoid factor of unspecified hip	Diagnosis	ICD-10-CM
M05.861	Other rheumatoid arthritis with rheumatoid factor of right knee	Diagnosis	ICD-10-CM
M05.862	Other rheumatoid arthritis with rheumatoid factor of left knee	Diagnosis	ICD-10-CM
M05.869	Other rheumatoid arthritis with rheumatoid factor of unspecified knee	Diagnosis	ICD-10-CM
M05.871	Other rheumatoid arthritis with rheumatoid factor of right ankle and foot	Diagnosis	ICD-10-CM
M05.872	Other rheumatoid arthritis with rheumatoid factor of left ankle and foot	Diagnosis	ICD-10-CM
M05.879	Other rheumatoid arthritis with rheumatoid factor of unspecified ankle and foot	Diagnosis	ICD-10-CM
M05.89	Other rheumatoid arthritis with rheumatoid factor of multiple sites	Diagnosis	ICD-10-CM
M05.9	Rheumatoid arthritis with rheumatoid factor, unspecified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M06.00	Rheumatoid arthritis without rheumatoid factor, unspecified site	Diagnosis	ICD-10-CM
M06.011	Rheumatoid arthritis without rheumatoid factor, right shoulder	Diagnosis	ICD-10-CM
M06.012	Rheumatoid arthritis without rheumatoid factor, left shoulder	Diagnosis	ICD-10-CM
M06.019	Rheumatoid arthritis without rheumatoid factor, unspecified shoulder	Diagnosis	ICD-10-CM
M06.021	Rheumatoid arthritis without rheumatoid factor, right elbow	Diagnosis	ICD-10-CM
M06.022	Rheumatoid arthritis without rheumatoid factor, left elbow	Diagnosis	ICD-10-CM
M06.029	Rheumatoid arthritis without rheumatoid factor, unspecified elbow	Diagnosis	ICD-10-CM
M06.031	Rheumatoid arthritis without rheumatoid factor, right wrist	Diagnosis	ICD-10-CM
M06.032	Rheumatoid arthritis without rheumatoid factor, left wrist	Diagnosis	ICD-10-CM
M06.039	Rheumatoid arthritis without rheumatoid factor, unspecified wrist	Diagnosis	ICD-10-CM
M06.041	Rheumatoid arthritis without rheumatoid factor, right hand	Diagnosis	ICD-10-CM
M06.042	Rheumatoid arthritis without rheumatoid factor, left hand	Diagnosis	ICD-10-CM
M06.049	Rheumatoid arthritis without rheumatoid factor, unspecified hand	Diagnosis	ICD-10-CM
M06.051	Rheumatoid arthritis without rheumatoid factor, right hip	Diagnosis	ICD-10-CM
M06.052	Rheumatoid arthritis without rheumatoid factor, left hip	Diagnosis	ICD-10-CM
M06.059	Rheumatoid arthritis without rheumatoid factor, unspecified hip	Diagnosis	ICD-10-CM
M06.061	Rheumatoid arthritis without rheumatoid factor, right knee	Diagnosis	ICD-10-CM
M06.062	Rheumatoid arthritis without rheumatoid factor, left knee	Diagnosis	ICD-10-CM
M06.069	Rheumatoid arthritis without rheumatoid factor, unspecified knee	Diagnosis	ICD-10-CM
M06.071	Rheumatoid arthritis without rheumatoid factor, right ankle and foot	Diagnosis	ICD-10-CM
M06.072	Rheumatoid arthritis without rheumatoid factor, left ankle and foot	Diagnosis	ICD-10-CM
M06.079	Rheumatoid arthritis without rheumatoid factor, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.08	Rheumatoid arthritis without rheumatoid factor, vertebrae	Diagnosis	ICD-10-CM
M06.09	Rheumatoid arthritis without rheumatoid factor, multiple sites	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M06.1	Adult-onset Still's disease	Diagnosis	ICD-10-CM
M06.20	Rheumatoid bursitis, unspecified site	Diagnosis	ICD-10-CM
M06.211	Rheumatoid bursitis, right shoulder	Diagnosis	ICD-10-CM
M06.212	Rheumatoid bursitis, left shoulder	Diagnosis	ICD-10-CM
M06.219	Rheumatoid bursitis, unspecified shoulder	Diagnosis	ICD-10-CM
M06.221	Rheumatoid bursitis, right elbow	Diagnosis	ICD-10-CM
M06.222	Rheumatoid bursitis, left elbow	Diagnosis	ICD-10-CM
M06.229	Rheumatoid bursitis, unspecified elbow	Diagnosis	ICD-10-CM
M06.231	Rheumatoid bursitis, right wrist	Diagnosis	ICD-10-CM
M06.232	Rheumatoid bursitis, left wrist	Diagnosis	ICD-10-CM
M06.239	Rheumatoid bursitis, unspecified wrist	Diagnosis	ICD-10-CM
M06.241	Rheumatoid bursitis, right hand	Diagnosis	ICD-10-CM
M06.242	Rheumatoid bursitis, left hand	Diagnosis	ICD-10-CM
M06.249	Rheumatoid bursitis, unspecified hand	Diagnosis	ICD-10-CM
M06.251	Rheumatoid bursitis, right hip	Diagnosis	ICD-10-CM
M06.252	Rheumatoid bursitis, left hip	Diagnosis	ICD-10-CM
M06.259	Rheumatoid bursitis, unspecified hip	Diagnosis	ICD-10-CM
M06.261	Rheumatoid bursitis, right knee	Diagnosis	ICD-10-CM
M06.262	Rheumatoid bursitis, left knee	Diagnosis	ICD-10-CM
M06.269	Rheumatoid bursitis, unspecified knee	Diagnosis	ICD-10-CM
M06.271	Rheumatoid bursitis, right ankle and foot	Diagnosis	ICD-10-CM
M06.272	Rheumatoid bursitis, left ankle and foot	Diagnosis	ICD-10-CM
M06.279	Rheumatoid bursitis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.28	Rheumatoid bursitis, vertebrae	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M06.29	Rheumatoid bursitis, multiple sites	Diagnosis	ICD-10-CM
M06.30	Rheumatoid nodule, unspecified site	Diagnosis	ICD-10-CM
M06.311	Rheumatoid nodule, right shoulder	Diagnosis	ICD-10-CM
M06.312	Rheumatoid nodule, left shoulder	Diagnosis	ICD-10-CM
M06.319	Rheumatoid nodule, unspecified shoulder	Diagnosis	ICD-10-CM
M06.321	Rheumatoid nodule, right elbow	Diagnosis	ICD-10-CM
M06.322	Rheumatoid nodule, left elbow	Diagnosis	ICD-10-CM
M06.329	Rheumatoid nodule, unspecified elbow	Diagnosis	ICD-10-CM
M06.331	Rheumatoid nodule, right wrist	Diagnosis	ICD-10-CM
M06.332	Rheumatoid nodule, left wrist	Diagnosis	ICD-10-CM
M06.339	Rheumatoid nodule, unspecified wrist	Diagnosis	ICD-10-CM
M06.341	Rheumatoid nodule, right hand	Diagnosis	ICD-10-CM
M06.342	Rheumatoid nodule, left hand	Diagnosis	ICD-10-CM
M06.349	Rheumatoid nodule, unspecified hand	Diagnosis	ICD-10-CM
M06.351	Rheumatoid nodule, right hip	Diagnosis	ICD-10-CM
M06.352	Rheumatoid nodule, left hip	Diagnosis	ICD-10-CM
M06.359	Rheumatoid nodule, unspecified hip	Diagnosis	ICD-10-CM
M06.361	Rheumatoid nodule, right knee	Diagnosis	ICD-10-CM
M06.362	Rheumatoid nodule, left knee	Diagnosis	ICD-10-CM
M06.369	Rheumatoid nodule, unspecified knee	Diagnosis	ICD-10-CM
M06.371	Rheumatoid nodule, right ankle and foot	Diagnosis	ICD-10-CM
M06.372	Rheumatoid nodule, left ankle and foot	Diagnosis	ICD-10-CM
M06.379	Rheumatoid nodule, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.38	Rheumatoid nodule, vertebrae	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M06.39	Rheumatoid nodule, multiple sites	Diagnosis	ICD-10-CM
M06.80	Other specified rheumatoid arthritis, unspecified site	Diagnosis	ICD-10-CM
M06.811	Other specified rheumatoid arthritis, right shoulder	Diagnosis	ICD-10-CM
M06.812	Other specified rheumatoid arthritis, left shoulder	Diagnosis	ICD-10-CM
M06.819	Other specified rheumatoid arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M06.821	Other specified rheumatoid arthritis, right elbow	Diagnosis	ICD-10-CM
M06.822	Other specified rheumatoid arthritis, left elbow	Diagnosis	ICD-10-CM
M06.829	Other specified rheumatoid arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M06.831	Other specified rheumatoid arthritis, right wrist	Diagnosis	ICD-10-CM
M06.832	Other specified rheumatoid arthritis, left wrist	Diagnosis	ICD-10-CM
M06.839	Other specified rheumatoid arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M06.841	Other specified rheumatoid arthritis, right hand	Diagnosis	ICD-10-CM
M06.842	Other specified rheumatoid arthritis, left hand	Diagnosis	ICD-10-CM
M06.849	Other specified rheumatoid arthritis, unspecified hand	Diagnosis	ICD-10-CM
M06.851	Other specified rheumatoid arthritis, right hip	Diagnosis	ICD-10-CM
M06.852	Other specified rheumatoid arthritis, left hip	Diagnosis	ICD-10-CM
M06.859	Other specified rheumatoid arthritis, unspecified hip	Diagnosis	ICD-10-CM
M06.861	Other specified rheumatoid arthritis, right knee	Diagnosis	ICD-10-CM
M06.862	Other specified rheumatoid arthritis, left knee	Diagnosis	ICD-10-CM
M06.869	Other specified rheumatoid arthritis, unspecified knee	Diagnosis	ICD-10-CM
M06.871	Other specified rheumatoid arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M06.872	Other specified rheumatoid arthritis, left ankle and foot	Diagnosis	ICD-10-CM
M06.879	Other specified rheumatoid arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M06.88	Other specified rheumatoid arthritis, vertebrae	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M06.89	Other specified rheumatoid arthritis, multiple sites	Diagnosis	ICD-10-CM
M06.9	Rheumatoid arthritis, unspecified	Diagnosis	ICD-10-CM
M08.00	Unspecified juvenile rheumatoid arthritis of unspecified site	Diagnosis	ICD-10-CM
M08.011	Unspecified juvenile rheumatoid arthritis, right shoulder	Diagnosis	ICD-10-CM
M08.012	Unspecified juvenile rheumatoid arthritis, left shoulder	Diagnosis	ICD-10-CM
M08.019	Unspecified juvenile rheumatoid arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M08.021	Unspecified juvenile rheumatoid arthritis, right elbow	Diagnosis	ICD-10-CM
M08.022	Unspecified juvenile rheumatoid arthritis, left elbow	Diagnosis	ICD-10-CM
M08.029	Unspecified juvenile rheumatoid arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M08.031	Unspecified juvenile rheumatoid arthritis, right wrist	Diagnosis	ICD-10-CM
M08.032	Unspecified juvenile rheumatoid arthritis, left wrist	Diagnosis	ICD-10-CM
M08.039	Unspecified juvenile rheumatoid arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M08.041	Unspecified juvenile rheumatoid arthritis, right hand	Diagnosis	ICD-10-CM
M08.042	Unspecified juvenile rheumatoid arthritis, left hand	Diagnosis	ICD-10-CM
M08.049	Unspecified juvenile rheumatoid arthritis, unspecified hand	Diagnosis	ICD-10-CM
M08.051	Unspecified juvenile rheumatoid arthritis, right hip	Diagnosis	ICD-10-CM
M08.052	Unspecified juvenile rheumatoid arthritis, left hip	Diagnosis	ICD-10-CM
M08.059	Unspecified juvenile rheumatoid arthritis, unspecified hip	Diagnosis	ICD-10-CM
M08.061	Unspecified juvenile rheumatoid arthritis, right knee	Diagnosis	ICD-10-CM
M08.062	Unspecified juvenile rheumatoid arthritis, left knee	Diagnosis	ICD-10-CM
M08.069	Unspecified juvenile rheumatoid arthritis, unspecified knee	Diagnosis	ICD-10-CM
M08.071	Unspecified juvenile rheumatoid arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M08.072	Unspecified juvenile rheumatoid arthritis, left ankle and foot	Diagnosis	ICD-10-CM
M08.079	Unspecified juvenile rheumatoid arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M08.08	Unspecified juvenile rheumatoid arthritis, vertebrae	Diagnosis	ICD-10-CM
M08.09	Unspecified juvenile rheumatoid arthritis, multiple sites	Diagnosis	ICD-10-CM
M08.20	Juvenile rheumatoid arthritis with systemic onset, unspecified site	Diagnosis	ICD-10-CM
M08.211	Juvenile rheumatoid arthritis with systemic onset, right shoulder	Diagnosis	ICD-10-CM
M08.212	Juvenile rheumatoid arthritis with systemic onset, left shoulder	Diagnosis	ICD-10-CM
M08.219	Juvenile rheumatoid arthritis with systemic onset, unspecified shoulder	Diagnosis	ICD-10-CM
M08.221	Juvenile rheumatoid arthritis with systemic onset, right elbow	Diagnosis	ICD-10-CM
M08.222	Juvenile rheumatoid arthritis with systemic onset, left elbow	Diagnosis	ICD-10-CM
M08.229	Juvenile rheumatoid arthritis with systemic onset, unspecified elbow	Diagnosis	ICD-10-CM
M08.231	Juvenile rheumatoid arthritis with systemic onset, right wrist	Diagnosis	ICD-10-CM
M08.232	Juvenile rheumatoid arthritis with systemic onset, left wrist	Diagnosis	ICD-10-CM
M08.239	Juvenile rheumatoid arthritis with systemic onset, unspecified wrist	Diagnosis	ICD-10-CM
M08.241	Juvenile rheumatoid arthritis with systemic onset, right hand	Diagnosis	ICD-10-CM
M08.242	Juvenile rheumatoid arthritis with systemic onset, left hand	Diagnosis	ICD-10-CM
M08.249	Juvenile rheumatoid arthritis with systemic onset, unspecified hand	Diagnosis	ICD-10-CM
M08.251	Juvenile rheumatoid arthritis with systemic onset, right hip	Diagnosis	ICD-10-CM
M08.252	Juvenile rheumatoid arthritis with systemic onset, left hip	Diagnosis	ICD-10-CM
M08.259	Juvenile rheumatoid arthritis with systemic onset, unspecified hip	Diagnosis	ICD-10-CM
M08.261	Juvenile rheumatoid arthritis with systemic onset, right knee	Diagnosis	ICD-10-CM
M08.262	Juvenile rheumatoid arthritis with systemic onset, left knee	Diagnosis	ICD-10-CM
M08.269	Juvenile rheumatoid arthritis with systemic onset, unspecified knee	Diagnosis	ICD-10-CM
M08.271	Juvenile rheumatoid arthritis with systemic onset, right ankle and foot	Diagnosis	ICD-10-CM
M08.272	Juvenile rheumatoid arthritis with systemic onset, left ankle and foot	Diagnosis	ICD-10-CM
M08.279	Juvenile rheumatoid arthritis with systemic onset, unspecified ankle and foot	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M08.28	Juvenile rheumatoid arthritis with systemic onset, vertebrae	Diagnosis	ICD-10-CM
M08.29	Juvenile rheumatoid arthritis with systemic onset, multiple sites	Diagnosis	ICD-10-CM
M08.3	Juvenile rheumatoid polyarthritis (seronegative)	Diagnosis	ICD-10-CM
M08.40	Pauciarticular juvenile rheumatoid arthritis, unspecified site	Diagnosis	ICD-10-CM
M08.411	Pauciarticular juvenile rheumatoid arthritis, right shoulder	Diagnosis	ICD-10-CM
M08.412	Pauciarticular juvenile rheumatoid arthritis, left shoulder	Diagnosis	ICD-10-CM
M08.419	Pauciarticular juvenile rheumatoid arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M08.421	Pauciarticular juvenile rheumatoid arthritis, right elbow	Diagnosis	ICD-10-CM
M08.422	Pauciarticular juvenile rheumatoid arthritis, left elbow	Diagnosis	ICD-10-CM
M08.429	Pauciarticular juvenile rheumatoid arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M08.431	Pauciarticular juvenile rheumatoid arthritis, right wrist	Diagnosis	ICD-10-CM
M08.432	Pauciarticular juvenile rheumatoid arthritis, left wrist	Diagnosis	ICD-10-CM
M08.439	Pauciarticular juvenile rheumatoid arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M08.441	Pauciarticular juvenile rheumatoid arthritis, right hand	Diagnosis	ICD-10-CM
M08.442	Pauciarticular juvenile rheumatoid arthritis, left hand	Diagnosis	ICD-10-CM
M08.449	Pauciarticular juvenile rheumatoid arthritis, unspecified hand	Diagnosis	ICD-10-CM
M08.451	Pauciarticular juvenile rheumatoid arthritis, right hip	Diagnosis	ICD-10-CM
M08.452	Pauciarticular juvenile rheumatoid arthritis, left hip	Diagnosis	ICD-10-CM
M08.459	Pauciarticular juvenile rheumatoid arthritis, unspecified hip	Diagnosis	ICD-10-CM
M08.461	Pauciarticular juvenile rheumatoid arthritis, right knee	Diagnosis	ICD-10-CM
M08.462	Pauciarticular juvenile rheumatoid arthritis, left knee	Diagnosis	ICD-10-CM
M08.469	Pauciarticular juvenile rheumatoid arthritis, unspecified knee	Diagnosis	ICD-10-CM
M08.471	Pauciarticular juvenile rheumatoid arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M08.472	Pauciarticular juvenile rheumatoid arthritis, left ankle and foot	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M08.479	Pauciarticular juvenile rheumatoid arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM
M08.48	Pauciarticular juvenile rheumatoid arthritis, vertebrae	Diagnosis	ICD-10-CM
M08.80	Other juvenile arthritis, unspecified site	Diagnosis	ICD-10-CM
M08.811	Other juvenile arthritis, right shoulder	Diagnosis	ICD-10-CM
M08.812	Other juvenile arthritis, left shoulder	Diagnosis	ICD-10-CM
M08.819	Other juvenile arthritis, unspecified shoulder	Diagnosis	ICD-10-CM
M08.821	Other juvenile arthritis, right elbow	Diagnosis	ICD-10-CM
M08.822	Other juvenile arthritis, left elbow	Diagnosis	ICD-10-CM
M08.829	Other juvenile arthritis, unspecified elbow	Diagnosis	ICD-10-CM
M08.831	Other juvenile arthritis, right wrist	Diagnosis	ICD-10-CM
M08.832	Other juvenile arthritis, left wrist	Diagnosis	ICD-10-CM
M08.839	Other juvenile arthritis, unspecified wrist	Diagnosis	ICD-10-CM
M08.841	Other juvenile arthritis, right hand	Diagnosis	ICD-10-CM
M08.842	Other juvenile arthritis, left hand	Diagnosis	ICD-10-CM
M08.849	Other juvenile arthritis, unspecified hand	Diagnosis	ICD-10-CM
M08.851	Other juvenile arthritis, right hip	Diagnosis	ICD-10-CM
M08.852	Other juvenile arthritis, left hip	Diagnosis	ICD-10-CM
M08.859	Other juvenile arthritis, unspecified hip	Diagnosis	ICD-10-CM
M08.861	Other juvenile arthritis, right knee	Diagnosis	ICD-10-CM
M08.862	Other juvenile arthritis, left knee	Diagnosis	ICD-10-CM
M08.869	Other juvenile arthritis, unspecified knee	Diagnosis	ICD-10-CM
M08.871	Other juvenile arthritis, right ankle and foot	Diagnosis	ICD-10-CM
M08.872	Other juvenile arthritis, left ankle and foot	Diagnosis	ICD-10-CM
M08.879	Other juvenile arthritis, unspecified ankle and foot	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M08.88	Other juvenile arthritis, other specified site	Diagnosis	ICD-10-CM
M08.89	Other juvenile arthritis, multiple sites	Diagnosis	ICD-10-CM
M08.90	Juvenile arthritis, unspecified, unspecified site	Diagnosis	ICD-10-CM
M08.911	Juvenile arthritis, unspecified, right shoulder	Diagnosis	ICD-10-CM
M08.912	Juvenile arthritis, unspecified, left shoulder	Diagnosis	ICD-10-CM
M08.919	Juvenile arthritis, unspecified, unspecified shoulder	Diagnosis	ICD-10-CM
M08.921	Juvenile arthritis, unspecified, right elbow	Diagnosis	ICD-10-CM
M08.922	Juvenile arthritis, unspecified, left elbow	Diagnosis	ICD-10-CM
M08.929	Juvenile arthritis, unspecified, unspecified elbow	Diagnosis	ICD-10-CM
M08.931	Juvenile arthritis, unspecified, right wrist	Diagnosis	ICD-10-CM
M08.932	Juvenile arthritis, unspecified, left wrist	Diagnosis	ICD-10-CM
M08.939	Juvenile arthritis, unspecified, unspecified wrist	Diagnosis	ICD-10-CM
M08.941	Juvenile arthritis, unspecified, right hand	Diagnosis	ICD-10-CM
M08.942	Juvenile arthritis, unspecified, left hand	Diagnosis	ICD-10-CM
M08.949	Juvenile arthritis, unspecified, unspecified hand	Diagnosis	ICD-10-CM
M08.951	Juvenile arthritis, unspecified, right hip	Diagnosis	ICD-10-CM
M08.952	Juvenile arthritis, unspecified, left hip	Diagnosis	ICD-10-CM
M08.959	Juvenile arthritis, unspecified, unspecified hip	Diagnosis	ICD-10-CM
M08.961	Juvenile arthritis, unspecified, right knee	Diagnosis	ICD-10-CM
M08.962	Juvenile arthritis, unspecified, left knee	Diagnosis	ICD-10-CM
M08.969	Juvenile arthritis, unspecified, unspecified knee	Diagnosis	ICD-10-CM
M08.971	Juvenile arthritis, unspecified, right ankle and foot	Diagnosis	ICD-10-CM
M08.972	Juvenile arthritis, unspecified, left ankle and foot	Diagnosis	ICD-10-CM
M08.979	Juvenile arthritis, unspecified, unspecified ankle and foot	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M08.98	Juvenile arthritis, unspecified, vertebrae	Diagnosis	ICD-10-CM
M08.99	Juvenile arthritis, unspecified, multiple sites	Diagnosis	ICD-10-CM
M30.0	Polyarteritis nodosa	Diagnosis	ICD-10-CM
M30.1	Polyarteritis with lung involvement [Churg-Strauss]	Diagnosis	ICD-10-CM
M30.2	Juvenile polyarteritis	Diagnosis	ICD-10-CM
M30.3	Mucocutaneous lymph node syndrome [Kawasaki]	Diagnosis	ICD-10-CM
M30.8	Other conditions related to polyarteritis nodosa	Diagnosis	ICD-10-CM
M31.0	Hypersensitivity angiitis	Diagnosis	ICD-10-CM
M31.30	Wegener's granulomatosis without renal involvement	Diagnosis	ICD-10-CM
M31.31	Wegener's granulomatosis with renal involvement	Diagnosis	ICD-10-CM
M31.4	Aortic arch syndrome [Takayasu]	Diagnosis	ICD-10-CM
M31.5	Giant cell arteritis with polymyalgia rheumatica	Diagnosis	ICD-10-CM
M31.6	Other giant cell arteritis	Diagnosis	ICD-10-CM
M31.7	Microscopic polyangiitis	Diagnosis	ICD-10-CM
M32.0	Drug-induced systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.10	Systemic lupus erythematosus, organ or system involvement unspecified	Diagnosis	ICD-10-CM
M32.11	Endocarditis in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.12	Pericarditis in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.13	Lung involvement in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.14	Glomerular disease in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.15	Tubulo-interstitial nephropathy in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.19	Other organ or system involvement in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.8	Other forms of systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.9	Systemic lupus erythematosus, unspecified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M34	SYSTEMIC SCLEROSIS SCLERODERMA	Diagnosis	ICD-10-CM
M34.0	PROGRESSIVE SYSTEMIC SCLEROSIS	Diagnosis	ICD-10-CM
M34.1	CREST SYNDROME	Diagnosis	ICD-10-CM
M34.2	SYSTEMIC SCLEROSIS INDUCED BY DRUG AND CHEMICAL	Diagnosis	ICD-10-CM
M34.8	OTHER FORMS OF SYSTEMIC SCLEROSIS	Diagnosis	ICD-10-CM
M34.81	SYSTEMIC SCLEROSIS WITH LUNG INVOLVEMENT	Diagnosis	ICD-10-CM
M34.82	SYSTEMIC SCLEROSIS WITH MYOPATHY	Diagnosis	ICD-10-CM
M34.83	SYSTEMIC SCLEROSIS WITH POLYNEUROPATHY	Diagnosis	ICD-10-CM
M34.89	OTHER SYSTEMIC SCLEROSIS	Diagnosis	ICD-10-CM
M34.9	SYSTEMIC SCLEROSIS UNSPECIFIED	Diagnosis	ICD-10-CM
M35.00	Sicca syndrome, unspecified	Diagnosis	ICD-10-CM
M35.01	Sicca syndrome with keratoconjunctivitis	Diagnosis	ICD-10-CM
M35.02	Sicca syndrome with lung involvement	Diagnosis	ICD-10-CM
M35.03	Sicca syndrome with myopathy	Diagnosis	ICD-10-CM
M35.04	Sicca syndrome with tubulo-interstitial nephropathy	Diagnosis	ICD-10-CM
M35.09	Sicca syndrome with other organ involvement	Diagnosis	ICD-10-CM
M35.2	Behcet's disease	Diagnosis	ICD-10-CM
<b>Blood Stem Cell Transplant</b>			
30230AZ	Transfusion of Embryonic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230U2	Transfusion of Allogeneic Related T-cell Depleted Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230U3	Transfusion of Allogeneic Unrelated T-cell Depleted Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
30230U4	Transfusion of Allogeneic Unspecified T-cell Depleted Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230X0	Transfusion of Autologous Cord Blood Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230X1	Transfusion of Nonautologous Cord Blood Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230X2	Transfusion of Allogeneic Related Cord Blood Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230X3	Transfusion of Allogeneic Unrelated Cord Blood Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230X4	Transfusion of Allogeneic Unspecified Cord Blood Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230Y0	Transfusion of Autologous Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230Y2	Transfusion of Allogeneic Related Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230Y3	Transfusion of Allogeneic Unrelated Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30230Y4	Transfusion of Allogeneic Unspecified Hematopoietic Stem Cells into Peripheral Vein, Open Approach	Procedure	ICD-10-PCS
30233AZ	Transfusion of Embryonic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233U2	Transfusion of Allogeneic Related T-cell Depleted Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233U3	Transfusion of Allogeneic Unrelated T-cell Depleted Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233U4	Transfusion of Allogeneic Unspecified T-cell Depleted Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233X0	Transfusion of Autologous Cord Blood Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS

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<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
30233X1	Transfusion of Nonautologous Cord Blood Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233X2	Transfusion of Allogeneic Related Cord Blood Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233X3	Transfusion of Allogeneic Unrelated Cord Blood Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233X4	Transfusion of Allogeneic Unspecified Cord Blood Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233Y0	Transfusion of Autologous Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233Y2	Transfusion of Allogeneic Related Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233Y3	Transfusion of Allogeneic Unrelated Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30233Y4	Transfusion of Allogeneic Unspecified Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30240AZ	Transfusion of Embryonic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240U2	Transfusion of Allogeneic Related T-cell Depleted Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240U3	Transfusion of Allogeneic Unrelated T-cell Depleted Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
30240U4	Transfusion of Allogeneic Unspecified T-cell Depleted Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240X0	Transfusion of Autologous Cord Blood Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240X1	Transfusion of Nonautologous Cord Blood Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240X2	Transfusion of Allogeneic Related Cord Blood Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240X3	Transfusion of Allogeneic Unrelated Cord Blood Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240X4	Transfusion of Allogeneic Unspecified Cord Blood Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240Y0	Transfusion of Autologous Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240Y2	Transfusion of Allogeneic Related Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240Y3	Transfusion of Allogeneic Unrelated Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30240Y4	Transfusion of Allogeneic Unspecified Hematopoietic Stem Cells into Central Vein, Open Approach	Procedure	ICD-10-PCS
30243AZ	Transfusion of Embryonic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243U2	Transfusion of Allogeneic Related T-cell Depleted Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243U3	Transfusion of Allogeneic Unrelated T-cell Depleted Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243U4	Transfusion of Allogeneic Unspecified T-cell Depleted Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243X0	Transfusion of Autologous Cord Blood Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243X1	Transfusion of Nonautologous Cord Blood Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243X2	Transfusion of Allogeneic Related Cord Blood Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
30243X3	Transfusion of Allogeneic Unrelated Cord Blood Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243X4	Transfusion of Allogeneic Unspecified Cord Blood Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243Y0	Transfusion of Autologous Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243Y2	Transfusion of Allogeneic Related Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243Y3	Transfusion of Allogeneic Unrelated Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30243Y4	Transfusion of Allogeneic Unspecified Hematopoietic Stem Cells into Central Vein, Percutaneous Approach	Procedure	ICD-10-PCS
30250X0	Transfusion of Autologous Cord Blood Stem Cells into Peripheral Artery, Open Approach	Procedure	ICD-10-PCS
30250X1	Transfusion of Nonautologous Cord Blood Stem Cells into Peripheral Artery, Open Approach	Procedure	ICD-10-PCS
30250Y0	Transfusion of Autologous Hematopoietic Stem Cells into Peripheral Artery, Open Approach	Procedure	ICD-10-PCS
30250Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Peripheral Artery, Open Approach	Procedure	ICD-10-PCS
30253X0	Transfusion of Autologous Cord Blood Stem Cells into Peripheral Artery, Percutaneous Approach	Procedure	ICD-10-PCS
30253X1	Transfusion of Nonautologous Cord Blood Stem Cells into Peripheral Artery, Percutaneous Approach	Procedure	ICD-10-PCS
30253Y0	Transfusion of Autologous Hematopoietic Stem Cells into Peripheral Artery, Percutaneous Approach	Procedure	ICD-10-PCS
30253Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Peripheral Artery, Percutaneous Approach	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
30260X0	Transfusion of Autologous Cord Blood Stem Cells into Central Artery, Open Approach	Procedure	ICD-10-PCS
30260X1	Transfusion of Nonautologous Cord Blood Stem Cells into Central Artery, Open Approach	Procedure	ICD-10-PCS
30260Y0	Transfusion of Autologous Hematopoietic Stem Cells into Central Artery, Open Approach	Procedure	ICD-10-PCS
30260Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Central Artery, Open Approach	Procedure	ICD-10-PCS
30263X0	Transfusion of Autologous Cord Blood Stem Cells into Central Artery, Percutaneous Approach	Procedure	ICD-10-PCS
30263X1	Transfusion of Nonautologous Cord Blood Stem Cells into Central Artery, Percutaneous Approach	Procedure	ICD-10-PCS
30263Y0	Transfusion of Autologous Hematopoietic Stem Cells into Central Artery, Percutaneous Approach	Procedure	ICD-10-PCS
30263Y1	Transfusion of Nonautologous Hematopoietic Stem Cells into Central Artery, Percutaneous Approach	Procedure	ICD-10-PCS
38240	Hematopoietic progenitor cell (HPC); allogeneic transplantation per donor	Procedure	CPT-4
38241	Hematopoietic progenitor cell (HPC); autologous transplantation	Procedure	CPT-4
38242	Allogeneic lymphocyte infusions	Procedure	CPT-4
38243	Hematopoietic progenitor cell (HPC); HPC boost	Procedure	CPT-4
3E0Q0AZ	Introduction of Embryonic Stem Cells into Cranial Cavity and Brain, Open Approach	Procedure	ICD-10-PCS
3E0Q0E0	Introduction of Autologous Somatic Stem Cells into Cranial Cavity and Brain, Open Approach	Procedure	ICD-10-PCS
3E0Q0E1	Introduction of Nonautologous Somatic Stem Cells into Cranial Cavity and Brain, Open Approach	Procedure	ICD-10-PCS
3E0Q3AZ	Introduction of Embryonic Stem Cells into Cranial Cavity and Brain, Percutaneous Approach	Procedure	ICD-10-PCS
3E0Q3E0	Introduction of Autologous Somatic Stem Cells into Cranial Cavity and Brain, Percutaneous Approach	Procedure	ICD-10-PCS
3E0Q3E1	Introduction of Nonautologous Somatic Stem Cells into Cranial Cavity and Brain, Percutaneous Approach	Procedure	ICD-10-PCS
3E0R0AZ	Introduction of Embryonic Stem Cells into Spinal Canal, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
3E0R0E0	Introduction of Autologous Somatic Stem Cells into Spinal Canal, Open Approach	Procedure	ICD-10-PCS
3E0R0E1	Introduction of Nonautologous Somatic Stem Cells into Spinal Canal, Open Approach	Procedure	ICD-10-PCS
3E0R3AZ	Introduction of Embryonic Stem Cells into Spinal Canal, Percutaneous Approach	Procedure	ICD-10-PCS
3E0R3E0	Introduction of Autologous Somatic Stem Cells into Spinal Canal, Percutaneous Approach	Procedure	ICD-10-PCS
3E0R3E1	Introduction of Nonautologous Somatic Stem Cells into Spinal Canal, Percutaneous Approach	Procedure	ICD-10-PCS
6A550ZT	Pheresis of Cord Blood Stem Cells, Single	Procedure	ICD-10-PCS
6A550ZV	Pheresis of Hematopoietic Stem Cells, Single	Procedure	ICD-10-PCS
6A551ZT	Pheresis of Cord Blood Stem Cells, Multiple	Procedure	ICD-10-PCS
6A551ZV	Pheresis of Hematopoietic Stem Cells, Multiple	Procedure	ICD-10-PCS
<b>Cancer</b>			
C00	Malignant neoplasm of lip	Diagnosis	ICD-10-CM
C00.0	Malignant neoplasm of external upper lip	Diagnosis	ICD-10-CM
C00.1	Malignant neoplasm of external lower lip	Diagnosis	ICD-10-CM
C00.2	Malignant neoplasm of external lip, unspecified	Diagnosis	ICD-10-CM
C00.3	Malignant neoplasm of upper lip, inner aspect	Diagnosis	ICD-10-CM
C00.4	Malignant neoplasm of lower lip, inner aspect	Diagnosis	ICD-10-CM
C00.5	Malignant neoplasm of lip, unspecified, inner aspect	Diagnosis	ICD-10-CM
C00.6	Malignant neoplasm of commissure of lip, unspecified	Diagnosis	ICD-10-CM
C00.8	Malignant neoplasm of overlapping sites of lip	Diagnosis	ICD-10-CM
C00.9	Malignant neoplasm of lip, unspecified	Diagnosis	ICD-10-CM
C01	Malignant neoplasm of base of tongue	Diagnosis	ICD-10-CM
C02	Malignant neoplasm of other and unspecified parts of tongue	Diagnosis	ICD-10-CM
C02.0	Malignant neoplasm of dorsal surface of tongue	Diagnosis	ICD-10-CM
C02.1	Malignant neoplasm of border of tongue	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C02.2	Malignant neoplasm of ventral surface of tongue	Diagnosis	ICD-10-CM
C02.3	Malignant neoplasm of anterior two-thirds of tongue, part unspecified	Diagnosis	ICD-10-CM
C02.4	Malignant neoplasm of lingual tonsil	Diagnosis	ICD-10-CM
C02.8	Malignant neoplasm of overlapping sites of tongue	Diagnosis	ICD-10-CM
C02.9	Malignant neoplasm of tongue, unspecified	Diagnosis	ICD-10-CM
C03	Malignant neoplasm of gum	Diagnosis	ICD-10-CM
C03.0	Malignant neoplasm of upper gum	Diagnosis	ICD-10-CM
C03.1	Malignant neoplasm of lower gum	Diagnosis	ICD-10-CM
C03.9	Malignant neoplasm of gum, unspecified	Diagnosis	ICD-10-CM
C04	Malignant neoplasm of floor of mouth	Diagnosis	ICD-10-CM
C04.0	Malignant neoplasm of anterior floor of mouth	Diagnosis	ICD-10-CM
C04.1	Malignant neoplasm of lateral floor of mouth	Diagnosis	ICD-10-CM
C04.8	Malignant neoplasm of overlapping sites of floor of mouth	Diagnosis	ICD-10-CM
C04.9	Malignant neoplasm of floor of mouth, unspecified	Diagnosis	ICD-10-CM
C05	Malignant neoplasm of palate	Diagnosis	ICD-10-CM
C05.0	Malignant neoplasm of hard palate	Diagnosis	ICD-10-CM
C05.1	Malignant neoplasm of soft palate	Diagnosis	ICD-10-CM
C05.2	Malignant neoplasm of uvula	Diagnosis	ICD-10-CM
C05.8	Malignant neoplasm of overlapping sites of palate	Diagnosis	ICD-10-CM
C05.9	Malignant neoplasm of palate, unspecified	Diagnosis	ICD-10-CM
C06	Malignant neoplasm of other and unspecified parts of mouth	Diagnosis	ICD-10-CM
C06.0	Malignant neoplasm of cheek mucosa	Diagnosis	ICD-10-CM
C06.1	Malignant neoplasm of vestibule of mouth	Diagnosis	ICD-10-CM
C06.2	Malignant neoplasm of retromolar area	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C06.8	Malignant neoplasm of overlapping sites of other and unspecified parts of mouth	Diagnosis	ICD-10-CM
C06.80	Malignant neoplasm of overlapping sites of unspecified parts of mouth	Diagnosis	ICD-10-CM
C06.89	Malignant neoplasm of overlapping sites of other parts of mouth	Diagnosis	ICD-10-CM
C06.9	Malignant neoplasm of mouth, unspecified	Diagnosis	ICD-10-CM
C07	Malignant neoplasm of parotid gland	Diagnosis	ICD-10-CM
C08	Malignant neoplasm of other and unspecified major salivary glands	Diagnosis	ICD-10-CM
C08.0	Malignant neoplasm of submandibular gland	Diagnosis	ICD-10-CM
C08.1	Malignant neoplasm of sublingual gland	Diagnosis	ICD-10-CM
C08.9	Malignant neoplasm of major salivary gland, unspecified	Diagnosis	ICD-10-CM
C09	Malignant neoplasm of tonsil	Diagnosis	ICD-10-CM
C09.0	Malignant neoplasm of tonsillar fossa	Diagnosis	ICD-10-CM
C09.1	Malignant neoplasm of tonsillar pillar (anterior) (posterior)	Diagnosis	ICD-10-CM
C09.8	Malignant neoplasm of overlapping sites of tonsil	Diagnosis	ICD-10-CM
C09.9	Malignant neoplasm of tonsil, unspecified	Diagnosis	ICD-10-CM
C10	Malignant neoplasm of oropharynx	Diagnosis	ICD-10-CM
C10.0	Malignant neoplasm of vallecula	Diagnosis	ICD-10-CM
C10.1	Malignant neoplasm of anterior surface of epiglottis	Diagnosis	ICD-10-CM
C10.2	Malignant neoplasm of lateral wall of oropharynx	Diagnosis	ICD-10-CM
C10.3	Malignant neoplasm of posterior wall of oropharynx	Diagnosis	ICD-10-CM
C10.4	Malignant neoplasm of branchial cleft	Diagnosis	ICD-10-CM
C10.8	Malignant neoplasm of overlapping sites of oropharynx	Diagnosis	ICD-10-CM
C10.9	Malignant neoplasm of oropharynx, unspecified	Diagnosis	ICD-10-CM
C11	Malignant neoplasm of nasopharynx	Diagnosis	ICD-10-CM
C11.0	Malignant neoplasm of superior wall of nasopharynx	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C11.1	Malignant neoplasm of posterior wall of nasopharynx	Diagnosis	ICD-10-CM
C11.2	Malignant neoplasm of lateral wall of nasopharynx	Diagnosis	ICD-10-CM
C11.3	Malignant neoplasm of anterior wall of nasopharynx	Diagnosis	ICD-10-CM
C11.8	Malignant neoplasm of overlapping sites of nasopharynx	Diagnosis	ICD-10-CM
C11.9	Malignant neoplasm of nasopharynx, unspecified	Diagnosis	ICD-10-CM
C12	Malignant neoplasm of pyriform sinus	Diagnosis	ICD-10-CM
C13	Malignant neoplasm of hypopharynx	Diagnosis	ICD-10-CM
C13.0	Malignant neoplasm of postcricoid region	Diagnosis	ICD-10-CM
C13.1	Malignant neoplasm of aryepiglottic fold, hypopharyngeal aspect	Diagnosis	ICD-10-CM
C13.2	Malignant neoplasm of posterior wall of hypopharynx	Diagnosis	ICD-10-CM
C13.8	Malignant neoplasm of overlapping sites of hypopharynx	Diagnosis	ICD-10-CM
C13.9	Malignant neoplasm of hypopharynx, unspecified	Diagnosis	ICD-10-CM
C14	Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx	Diagnosis	ICD-10-CM
C14.0	Malignant neoplasm of pharynx, unspecified	Diagnosis	ICD-10-CM
C14.2	Malignant neoplasm of Waldeyer's ring	Diagnosis	ICD-10-CM
C14.8	Malignant neoplasm of overlapping sites of lip, oral cavity and pharynx	Diagnosis	ICD-10-CM
C15	Malignant neoplasm of esophagus	Diagnosis	ICD-10-CM
C15.3	Malignant neoplasm of upper third of esophagus	Diagnosis	ICD-10-CM
C15.4	Malignant neoplasm of middle third of esophagus	Diagnosis	ICD-10-CM
C15.5	Malignant neoplasm of lower third of esophagus	Diagnosis	ICD-10-CM
C15.8	Malignant neoplasm of overlapping sites of esophagus	Diagnosis	ICD-10-CM
C15.9	Malignant neoplasm of esophagus, unspecified	Diagnosis	ICD-10-CM
C16	Malignant neoplasm of stomach	Diagnosis	ICD-10-CM
C16.0	Malignant neoplasm of cardia	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C16.1	Malignant neoplasm of fundus of stomach	Diagnosis	ICD-10-CM
C16.2	Malignant neoplasm of body of stomach	Diagnosis	ICD-10-CM
C16.3	Malignant neoplasm of pyloric antrum	Diagnosis	ICD-10-CM
C16.4	Malignant neoplasm of pylorus	Diagnosis	ICD-10-CM
C16.5	Malignant neoplasm of lesser curvature of stomach, unspecified	Diagnosis	ICD-10-CM
C16.6	Malignant neoplasm of greater curvature of stomach, unspecified	Diagnosis	ICD-10-CM
C16.8	Malignant neoplasm of overlapping sites of stomach	Diagnosis	ICD-10-CM
C16.9	Malignant neoplasm of stomach, unspecified	Diagnosis	ICD-10-CM
C17	Malignant neoplasm of small intestine	Diagnosis	ICD-10-CM
C17.0	Malignant neoplasm of duodenum	Diagnosis	ICD-10-CM
C17.1	Malignant neoplasm of jejunum	Diagnosis	ICD-10-CM
C17.2	Malignant neoplasm of ileum	Diagnosis	ICD-10-CM
C17.3	Meckel's diverticulum, malignant	Diagnosis	ICD-10-CM
C17.8	Malignant neoplasm of overlapping sites of small intestine	Diagnosis	ICD-10-CM
C17.9	Malignant neoplasm of small intestine, unspecified	Diagnosis	ICD-10-CM
C18	Malignant neoplasm of colon	Diagnosis	ICD-10-CM
C18.0	Malignant neoplasm of cecum	Diagnosis	ICD-10-CM
C18.1	Malignant neoplasm of appendix	Diagnosis	ICD-10-CM
C18.2	Malignant neoplasm of ascending colon	Diagnosis	ICD-10-CM
C18.3	Malignant neoplasm of hepatic flexure	Diagnosis	ICD-10-CM
C18.4	Malignant neoplasm of transverse colon	Diagnosis	ICD-10-CM
C18.5	Malignant neoplasm of splenic flexure	Diagnosis	ICD-10-CM
C18.6	Malignant neoplasm of descending colon	Diagnosis	ICD-10-CM
C18.7	Malignant neoplasm of sigmoid colon	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C18.8	Malignant neoplasm of overlapping sites of colon	Diagnosis	ICD-10-CM
C18.9	Malignant neoplasm of colon, unspecified	Diagnosis	ICD-10-CM
C19	Malignant neoplasm of rectosigmoid junction	Diagnosis	ICD-10-CM
C20	Malignant neoplasm of rectum	Diagnosis	ICD-10-CM
C21	Malignant neoplasm of anus and anal canal	Diagnosis	ICD-10-CM
C21.0	Malignant neoplasm of anus, unspecified	Diagnosis	ICD-10-CM
C21.1	Malignant neoplasm of anal canal	Diagnosis	ICD-10-CM
C21.2	Malignant neoplasm of cloacogenic zone	Diagnosis	ICD-10-CM
C21.8	Malignant neoplasm of overlapping sites of rectum, anus and anal canal	Diagnosis	ICD-10-CM
C22	Malignant neoplasm of liver and intrahepatic bile ducts	Diagnosis	ICD-10-CM
C22.0	Liver cell carcinoma	Diagnosis	ICD-10-CM
C22.1	Intrahepatic bile duct carcinoma	Diagnosis	ICD-10-CM
C22.2	Hepatoblastoma	Diagnosis	ICD-10-CM
C22.3	Angiosarcoma of liver	Diagnosis	ICD-10-CM
C22.4	Other sarcomas of liver	Diagnosis	ICD-10-CM
C22.7	Other specified carcinomas of liver	Diagnosis	ICD-10-CM
C22.8	Malignant neoplasm of liver, primary, unspecified as to type	Diagnosis	ICD-10-CM
C22.9	Malignant neoplasm of liver, not specified as primary or secondary	Diagnosis	ICD-10-CM
C23	Malignant neoplasm of gallbladder	Diagnosis	ICD-10-CM
C24	Malignant neoplasm of other and unspecified parts of biliary tract	Diagnosis	ICD-10-CM
C24.0	Malignant neoplasm of extrahepatic bile duct	Diagnosis	ICD-10-CM
C24.1	Malignant neoplasm of ampulla of Vater	Diagnosis	ICD-10-CM
C24.8	Malignant neoplasm of overlapping sites of biliary tract	Diagnosis	ICD-10-CM
C24.9	Malignant neoplasm of biliary tract, unspecified	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C25	Malignant neoplasm of pancreas	Diagnosis	ICD-10-CM
C25.0	Malignant neoplasm of head of pancreas	Diagnosis	ICD-10-CM
C25.1	Malignant neoplasm of body of pancreas	Diagnosis	ICD-10-CM
C25.2	Malignant neoplasm of tail of pancreas	Diagnosis	ICD-10-CM
C25.3	Malignant neoplasm of pancreatic duct	Diagnosis	ICD-10-CM
C25.4	Malignant neoplasm of endocrine pancreas	Diagnosis	ICD-10-CM
C25.7	Malignant neoplasm of other parts of pancreas	Diagnosis	ICD-10-CM
C25.8	Malignant neoplasm of overlapping sites of pancreas	Diagnosis	ICD-10-CM
C25.9	Malignant neoplasm of pancreas, unspecified	Diagnosis	ICD-10-CM
C26	Malignant neoplasm of other and ill-defined digestive organs	Diagnosis	ICD-10-CM
C26.0	Malignant neoplasm of intestinal tract, part unspecified	Diagnosis	ICD-10-CM
C26.1	Malignant neoplasm of spleen	Diagnosis	ICD-10-CM
C26.9	Malignant neoplasm of ill-defined sites within the digestive system	Diagnosis	ICD-10-CM
C30	Malignant neoplasm of nasal cavity and middle ear	Diagnosis	ICD-10-CM
C30.0	Malignant neoplasm of nasal cavity	Diagnosis	ICD-10-CM
C30.1	Malignant neoplasm of middle ear	Diagnosis	ICD-10-CM
C31	Malignant neoplasm of accessory sinuses	Diagnosis	ICD-10-CM
C31.0	Malignant neoplasm of maxillary sinus	Diagnosis	ICD-10-CM
C31.1	Malignant neoplasm of ethmoidal sinus	Diagnosis	ICD-10-CM
C31.2	Malignant neoplasm of frontal sinus	Diagnosis	ICD-10-CM
C31.3	Malignant neoplasm of sphenoid sinus	Diagnosis	ICD-10-CM
C31.8	Malignant neoplasm of overlapping sites of accessory sinuses	Diagnosis	ICD-10-CM
C31.9	Malignant neoplasm of accessory sinus, unspecified	Diagnosis	ICD-10-CM
C32	Malignant neoplasm of larynx	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C32.0	Malignant neoplasm of glottis	Diagnosis	ICD-10-CM
C32.1	Malignant neoplasm of supraglottis	Diagnosis	ICD-10-CM
C32.2	Malignant neoplasm of subglottis	Diagnosis	ICD-10-CM
C32.3	Malignant neoplasm of laryngeal cartilage	Diagnosis	ICD-10-CM
C32.8	Malignant neoplasm of overlapping sites of larynx	Diagnosis	ICD-10-CM
C32.9	Malignant neoplasm of larynx, unspecified	Diagnosis	ICD-10-CM
C33	Malignant neoplasm of trachea	Diagnosis	ICD-10-CM
C34	Malignant neoplasm of bronchus and lung	Diagnosis	ICD-10-CM
C34.0	Malignant neoplasm of main bronchus	Diagnosis	ICD-10-CM
C34.00	Malignant neoplasm of unspecified main bronchus	Diagnosis	ICD-10-CM
C34.01	Malignant neoplasm of right main bronchus	Diagnosis	ICD-10-CM
C34.02	Malignant neoplasm of left main bronchus	Diagnosis	ICD-10-CM
C34.1	Malignant neoplasm of upper lobe, bronchus or lung	Diagnosis	ICD-10-CM
C34.10	Malignant neoplasm of upper lobe, unspecified bronchus or lung	Diagnosis	ICD-10-CM
C34.11	Malignant neoplasm of upper lobe, right bronchus or lung	Diagnosis	ICD-10-CM
C34.12	Malignant neoplasm of upper lobe, left bronchus or lung	Diagnosis	ICD-10-CM
C34.2	Malignant neoplasm of middle lobe, bronchus or lung	Diagnosis	ICD-10-CM
C34.3	Malignant neoplasm of lower lobe, bronchus or lung	Diagnosis	ICD-10-CM
C34.30	Malignant neoplasm of lower lobe, unspecified bronchus or lung	Diagnosis	ICD-10-CM
C34.31	Malignant neoplasm of lower lobe, right bronchus or lung	Diagnosis	ICD-10-CM
C34.32	Malignant neoplasm of lower lobe, left bronchus or lung	Diagnosis	ICD-10-CM
C34.8	Malignant neoplasm of overlapping sites of bronchus and lung	Diagnosis	ICD-10-CM
C34.80	Malignant neoplasm of overlapping sites of unspecified bronchus and lung	Diagnosis	ICD-10-CM
C34.81	Malignant neoplasm of overlapping sites of right bronchus and lung	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C34.82	Malignant neoplasm of overlapping sites of left bronchus and lung	Diagnosis	ICD-10-CM
C34.9	Malignant neoplasm of unspecified part of bronchus or lung	Diagnosis	ICD-10-CM
C34.90	Malignant neoplasm of unspecified part of unspecified bronchus or lung	Diagnosis	ICD-10-CM
C34.91	Malignant neoplasm of unspecified part of right bronchus or lung	Diagnosis	ICD-10-CM
C34.92	Malignant neoplasm of unspecified part of left bronchus or lung	Diagnosis	ICD-10-CM
C37	Malignant neoplasm of thymus	Diagnosis	ICD-10-CM
C38	Malignant neoplasm of heart, mediastinum and pleura	Diagnosis	ICD-10-CM
C38.0	Malignant neoplasm of heart	Diagnosis	ICD-10-CM
C38.1	Malignant neoplasm of anterior mediastinum	Diagnosis	ICD-10-CM
C38.2	Malignant neoplasm of posterior mediastinum	Diagnosis	ICD-10-CM
C38.3	Malignant neoplasm of mediastinum, part unspecified	Diagnosis	ICD-10-CM
C38.4	Malignant neoplasm of pleura	Diagnosis	ICD-10-CM
C38.8	Malignant neoplasm of overlapping sites of heart, mediastinum and pleura	Diagnosis	ICD-10-CM
C39	Malignant neoplasm of other and ill-defined sites in the respiratory system and intrathoracic organs	Diagnosis	ICD-10-CM
C39.0	Malignant neoplasm of upper respiratory tract, part unspecified	Diagnosis	ICD-10-CM
C39.9	Malignant neoplasm of lower respiratory tract, part unspecified	Diagnosis	ICD-10-CM
C40	Malignant neoplasm of bone and articular cartilage of limbs	Diagnosis	ICD-10-CM
C40.0	Malignant neoplasm of scapula and long bones of upper limb	Diagnosis	ICD-10-CM
C40.00	Malignant neoplasm of scapula and long bones of unspecified upper limb	Diagnosis	ICD-10-CM
C40.01	Malignant neoplasm of scapula and long bones of right upper limb	Diagnosis	ICD-10-CM
C40.02	Malignant neoplasm of scapula and long bones of left upper limb	Diagnosis	ICD-10-CM
C40.1	Malignant neoplasm of short bones of upper limb	Diagnosis	ICD-10-CM
C40.10	Malignant neoplasm of short bones of unspecified upper limb	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C40.11	Malignant neoplasm of short bones of right upper limb	Diagnosis	ICD-10-CM
C40.12	Malignant neoplasm of short bones of left upper limb	Diagnosis	ICD-10-CM
C40.2	Malignant neoplasm of long bones of lower limb	Diagnosis	ICD-10-CM
C40.20	Malignant neoplasm of long bones of unspecified lower limb	Diagnosis	ICD-10-CM
C40.21	Malignant neoplasm of long bones of right lower limb	Diagnosis	ICD-10-CM
C40.22	Malignant neoplasm of long bones of left lower limb	Diagnosis	ICD-10-CM
C40.3	Malignant neoplasm of short bones of lower limb	Diagnosis	ICD-10-CM
C40.30	Malignant neoplasm of short bones of unspecified lower limb	Diagnosis	ICD-10-CM
C40.31	Malignant neoplasm of short bones of right lower limb	Diagnosis	ICD-10-CM
C40.32	Malignant neoplasm of short bones of left lower limb	Diagnosis	ICD-10-CM
C40.8	Malignant neoplasm of overlapping sites of bone and articular cartilage of limb	Diagnosis	ICD-10-CM
C40.80	Malignant neoplasm of overlapping sites of bone and articular cartilage of unspecified limb	Diagnosis	ICD-10-CM
C40.81	Malignant neoplasm of overlapping sites of bone and articular cartilage of right limb	Diagnosis	ICD-10-CM
C40.82	Malignant neoplasm of overlapping sites of bone and articular cartilage of left limb	Diagnosis	ICD-10-CM
C40.9	Malignant neoplasm of unspecified bones and articular cartilage of limb	Diagnosis	ICD-10-CM
C40.90	Malignant neoplasm of unspecified bones and articular cartilage of unspecified limb	Diagnosis	ICD-10-CM
C40.91	Malignant neoplasm of unspecified bones and articular cartilage of right limb	Diagnosis	ICD-10-CM
C40.92	Malignant neoplasm of unspecified bones and articular cartilage of left limb	Diagnosis	ICD-10-CM
C41	Malignant neoplasm of bone and articular cartilage of other and unspecified sites	Diagnosis	ICD-10-CM
C41.0	Malignant neoplasm of bones of skull and face	Diagnosis	ICD-10-CM
C41.1	Malignant neoplasm of mandible	Diagnosis	ICD-10-CM
C41.2	Malignant neoplasm of vertebral column	Diagnosis	ICD-10-CM
C41.3	Malignant neoplasm of ribs, sternum and clavicle	Diagnosis	ICD-10-CM
C41.4	Malignant neoplasm of pelvic bones, sacrum and coccyx	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C41.9	Malignant neoplasm of bone and articular cartilage, unspecified	Diagnosis	ICD-10-CM
C43	Malignant melanoma of skin	Diagnosis	ICD-10-CM
C43.0	Malignant melanoma of lip	Diagnosis	ICD-10-CM
C43.1	Malignant melanoma of eyelid, including canthus	Diagnosis	ICD-10-CM
C43.10	Malignant melanoma of unspecified eyelid, including canthus	Diagnosis	ICD-10-CM
C43.11	Malignant melanoma of right eyelid, including canthus	Diagnosis	ICD-10-CM
C43.111	Malignant melanoma of right upper eyelid, including canthus	Diagnosis	ICD-10-CM
C43.112	Malignant melanoma of right lower eyelid, including canthus	Diagnosis	ICD-10-CM
C43.12	Malignant melanoma of left eyelid, including canthus	Diagnosis	ICD-10-CM
C43.121	Malignant melanoma of left upper eyelid, including canthus	Diagnosis	ICD-10-CM
C43.122	Malignant melanoma of left lower eyelid, including canthus	Diagnosis	ICD-10-CM
C43.2	Malignant melanoma of ear and external auricular canal	Diagnosis	ICD-10-CM
C43.20	Malignant melanoma of unspecified ear and external auricular canal	Diagnosis	ICD-10-CM
C43.21	Malignant melanoma of right ear and external auricular canal	Diagnosis	ICD-10-CM
C43.22	Malignant melanoma of left ear and external auricular canal	Diagnosis	ICD-10-CM
C43.3	Malignant melanoma of other and unspecified parts of face	Diagnosis	ICD-10-CM
C43.30	Malignant melanoma of unspecified part of face	Diagnosis	ICD-10-CM
C43.31	Malignant melanoma of nose	Diagnosis	ICD-10-CM
C43.39	Malignant melanoma of other parts of face	Diagnosis	ICD-10-CM
C43.4	Malignant melanoma of scalp and neck	Diagnosis	ICD-10-CM
C43.5	Malignant melanoma of trunk	Diagnosis	ICD-10-CM
C43.51	Malignant melanoma of anal skin	Diagnosis	ICD-10-CM
C43.52	Malignant melanoma of skin of breast	Diagnosis	ICD-10-CM
C43.59	Malignant melanoma of other part of trunk	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C43.6	Malignant melanoma of upper limb, including shoulder	Diagnosis	ICD-10-CM
C43.60	Malignant melanoma of unspecified upper limb, including shoulder	Diagnosis	ICD-10-CM
C43.61	Malignant melanoma of right upper limb, including shoulder	Diagnosis	ICD-10-CM
C43.62	Malignant melanoma of left upper limb, including shoulder	Diagnosis	ICD-10-CM
C43.7	Malignant melanoma of lower limb, including hip	Diagnosis	ICD-10-CM
C43.70	Malignant melanoma of unspecified lower limb, including hip	Diagnosis	ICD-10-CM
C43.71	Malignant melanoma of right lower limb, including hip	Diagnosis	ICD-10-CM
C43.72	Malignant melanoma of left lower limb, including hip	Diagnosis	ICD-10-CM
C43.8	Malignant melanoma of overlapping sites of skin	Diagnosis	ICD-10-CM
C43.9	Malignant melanoma of skin, unspecified	Diagnosis	ICD-10-CM
C45	Mesothelioma	Diagnosis	ICD-10-CM
C45.0	Mesothelioma of pleura	Diagnosis	ICD-10-CM
C45.1	Mesothelioma of peritoneum	Diagnosis	ICD-10-CM
C45.2	Mesothelioma of pericardium	Diagnosis	ICD-10-CM
C45.7	Mesothelioma of other sites	Diagnosis	ICD-10-CM
C45.9	Mesothelioma, unspecified	Diagnosis	ICD-10-CM
C46	Kaposi's sarcoma	Diagnosis	ICD-10-CM
C46.0	Kaposi's sarcoma of skin	Diagnosis	ICD-10-CM
C46.1	Kaposi's sarcoma of soft tissue	Diagnosis	ICD-10-CM
C46.2	Kaposi's sarcoma of palate	Diagnosis	ICD-10-CM
C46.3	Kaposi's sarcoma of lymph nodes	Diagnosis	ICD-10-CM
C46.4	Kaposi's sarcoma of gastrointestinal sites	Diagnosis	ICD-10-CM
C46.5	Kaposi's sarcoma of lung	Diagnosis	ICD-10-CM
C46.50	Kaposi's sarcoma of unspecified lung	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C46.51	Kaposi's sarcoma of right lung	Diagnosis	ICD-10-CM
C46.52	Kaposi's sarcoma of left lung	Diagnosis	ICD-10-CM
C46.7	Kaposi's sarcoma of other sites	Diagnosis	ICD-10-CM
C46.9	Kaposi's sarcoma, unspecified	Diagnosis	ICD-10-CM
C47	Malignant neoplasm of peripheral nerves and autonomic nervous system	Diagnosis	ICD-10-CM
C47.0	Malignant neoplasm of peripheral nerves of head, face and neck	Diagnosis	ICD-10-CM
C47.1	Malignant neoplasm of peripheral nerves of upper limb, including shoulder	Diagnosis	ICD-10-CM
C47.10	Malignant neoplasm of peripheral nerves of unspecified upper limb, including shoulder	Diagnosis	ICD-10-CM
C47.11	Malignant neoplasm of peripheral nerves of right upper limb, including shoulder	Diagnosis	ICD-10-CM
C47.12	Malignant neoplasm of peripheral nerves of left upper limb, including shoulder	Diagnosis	ICD-10-CM
C47.2	Malignant neoplasm of peripheral nerves of lower limb, including hip	Diagnosis	ICD-10-CM
C47.20	Malignant neoplasm of peripheral nerves of unspecified lower limb, including hip	Diagnosis	ICD-10-CM
C47.21	Malignant neoplasm of peripheral nerves of right lower limb, including hip	Diagnosis	ICD-10-CM
C47.22	Malignant neoplasm of peripheral nerves of left lower limb, including hip	Diagnosis	ICD-10-CM
C47.3	Malignant neoplasm of peripheral nerves of thorax	Diagnosis	ICD-10-CM
C47.4	Malignant neoplasm of peripheral nerves of abdomen	Diagnosis	ICD-10-CM
C47.5	Malignant neoplasm of peripheral nerves of pelvis	Diagnosis	ICD-10-CM
C47.6	Malignant neoplasm of peripheral nerves of trunk, unspecified	Diagnosis	ICD-10-CM
C47.8	Malignant neoplasm of overlapping sites of peripheral nerves and autonomic nervous system	Diagnosis	ICD-10-CM
C47.9	Malignant neoplasm of peripheral nerves and autonomic nervous system, unspecified	Diagnosis	ICD-10-CM
C48	Malignant neoplasm of retroperitoneum and peritoneum	Diagnosis	ICD-10-CM
C48.0	Malignant neoplasm of retroperitoneum	Diagnosis	ICD-10-CM
C48.1	Malignant neoplasm of specified parts of peritoneum	Diagnosis	ICD-10-CM
C48.2	Malignant neoplasm of peritoneum, unspecified	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C48.8	Malignant neoplasm of overlapping sites of retroperitoneum and peritoneum	Diagnosis	ICD-10-CM
C49	Malignant neoplasm of other connective and soft tissue	Diagnosis	ICD-10-CM
C49.0	Malignant neoplasm of connective and soft tissue of head, face and neck	Diagnosis	ICD-10-CM
C49.1	Malignant neoplasm of connective and soft tissue of upper limb, including shoulder	Diagnosis	ICD-10-CM
C49.10	Malignant neoplasm of connective and soft tissue of unspecified upper limb, including shoulder	Diagnosis	ICD-10-CM
C49.11	Malignant neoplasm of connective and soft tissue of right upper limb, including shoulder	Diagnosis	ICD-10-CM
C49.12	Malignant neoplasm of connective and soft tissue of left upper limb, including shoulder	Diagnosis	ICD-10-CM
C49.2	Malignant neoplasm of connective and soft tissue of lower limb, including hip	Diagnosis	ICD-10-CM
C49.20	Malignant neoplasm of connective and soft tissue of unspecified lower limb, including hip	Diagnosis	ICD-10-CM
C49.21	Malignant neoplasm of connective and soft tissue of right lower limb, including hip	Diagnosis	ICD-10-CM
C49.22	Malignant neoplasm of connective and soft tissue of left lower limb, including hip	Diagnosis	ICD-10-CM
C49.3	Malignant neoplasm of connective and soft tissue of thorax	Diagnosis	ICD-10-CM
C49.4	Malignant neoplasm of connective and soft tissue of abdomen	Diagnosis	ICD-10-CM
C49.5	Malignant neoplasm of connective and soft tissue of pelvis	Diagnosis	ICD-10-CM
C49.6	Malignant neoplasm of connective and soft tissue of trunk, unspecified	Diagnosis	ICD-10-CM
C49.8	Malignant neoplasm of overlapping sites of connective and soft tissue	Diagnosis	ICD-10-CM
C49.9	Malignant neoplasm of connective and soft tissue, unspecified	Diagnosis	ICD-10-CM
C49.A	Gastrointestinal stromal tumor	Diagnosis	ICD-10-CM
C49.A0	Gastrointestinal stromal tumor, unspecified site	Diagnosis	ICD-10-CM
C49.A1	Gastrointestinal stromal tumor of esophagus	Diagnosis	ICD-10-CM
C49.A2	Gastrointestinal stromal tumor of stomach	Diagnosis	ICD-10-CM
C49.A3	Gastrointestinal stromal tumor of small intestine	Diagnosis	ICD-10-CM
C49.A4	Gastrointestinal stromal tumor of large intestine	Diagnosis	ICD-10-CM
C49.A5	Gastrointestinal stromal tumor of rectum	Diagnosis	ICD-10-CM



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Code	Description	Code Category	Code Type
C49.A9	Gastrointestinal stromal tumor of other sites	Diagnosis	ICD-10-CM
C4A	Merkel cell carcinoma	Diagnosis	ICD-10-CM
C4A.0	Merkel cell carcinoma of lip	Diagnosis	ICD-10-CM
C4A.1	Merkel cell carcinoma of eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.10	Merkel cell carcinoma of unspecified eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.11	Merkel cell carcinoma of right eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.111	Merkel cell carcinoma of right upper eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.112	Merkel cell carcinoma of right lower eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.12	Merkel cell carcinoma of left eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.121	Merkel cell carcinoma of left upper eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.122	Merkel cell carcinoma of left lower eyelid, including canthus	Diagnosis	ICD-10-CM
C4A.2	Merkel cell carcinoma of ear and external auricular canal	Diagnosis	ICD-10-CM
C4A.20	Merkel cell carcinoma of unspecified ear and external auricular canal	Diagnosis	ICD-10-CM
C4A.21	Merkel cell carcinoma of right ear and external auricular canal	Diagnosis	ICD-10-CM
C4A.22	Merkel cell carcinoma of left ear and external auricular canal	Diagnosis	ICD-10-CM
C4A.3	Merkel cell carcinoma of other and unspecified parts of face	Diagnosis	ICD-10-CM
C4A.30	Merkel cell carcinoma of unspecified part of face	Diagnosis	ICD-10-CM
C4A.31	Merkel cell carcinoma of nose	Diagnosis	ICD-10-CM
C4A.39	Merkel cell carcinoma of other parts of face	Diagnosis	ICD-10-CM
C4A.4	Merkel cell carcinoma of scalp and neck	Diagnosis	ICD-10-CM
C4A.5	Merkel cell carcinoma of trunk	Diagnosis	ICD-10-CM
C4A.51	Merkel cell carcinoma of anal skin	Diagnosis	ICD-10-CM
C4A.52	Merkel cell carcinoma of skin of breast	Diagnosis	ICD-10-CM
C4A.59	Merkel cell carcinoma of other part of trunk	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C4A.6	Merkel cell carcinoma of upper limb, including shoulder	Diagnosis	ICD-10-CM
C4A.60	Merkel cell carcinoma of unspecified upper limb, including shoulder	Diagnosis	ICD-10-CM
C4A.61	Merkel cell carcinoma of right upper limb, including shoulder	Diagnosis	ICD-10-CM
C4A.62	Merkel cell carcinoma of left upper limb, including shoulder	Diagnosis	ICD-10-CM
C4A.7	Merkel cell carcinoma of lower limb, including hip	Diagnosis	ICD-10-CM
C4A.70	Merkel cell carcinoma of unspecified lower limb, including hip	Diagnosis	ICD-10-CM
C4A.71	Merkel cell carcinoma of right lower limb, including hip	Diagnosis	ICD-10-CM
C4A.72	Merkel cell carcinoma of left lower limb, including hip	Diagnosis	ICD-10-CM
C4A.8	Merkel cell carcinoma of overlapping sites	Diagnosis	ICD-10-CM
C4A.9	Merkel cell carcinoma, unspecified	Diagnosis	ICD-10-CM
C50	Malignant neoplasm of breast	Diagnosis	ICD-10-CM
C50.0	Malignant neoplasm of nipple and areola	Diagnosis	ICD-10-CM
C50.01	Malignant neoplasm of nipple and areola, female	Diagnosis	ICD-10-CM
C50.011	Malignant neoplasm of nipple and areola, right female breast	Diagnosis	ICD-10-CM
C50.012	Malignant neoplasm of nipple and areola, left female breast	Diagnosis	ICD-10-CM
C50.019	Malignant neoplasm of nipple and areola, unspecified female breast	Diagnosis	ICD-10-CM
C50.02	Malignant neoplasm of nipple and areola, male	Diagnosis	ICD-10-CM
C50.021	Malignant neoplasm of nipple and areola, right male breast	Diagnosis	ICD-10-CM
C50.022	Malignant neoplasm of nipple and areola, left male breast	Diagnosis	ICD-10-CM
C50.029	Malignant neoplasm of nipple and areola, unspecified male breast	Diagnosis	ICD-10-CM
C50.1	Malignant neoplasm of central portion of breast	Diagnosis	ICD-10-CM
C50.11	Malignant neoplasm of central portion of breast, female	Diagnosis	ICD-10-CM
C50.111	Malignant neoplasm of central portion of right female breast	Diagnosis	ICD-10-CM
C50.112	Malignant neoplasm of central portion of left female breast	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C50.119	Malignant neoplasm of central portion of unspecified female breast	Diagnosis	ICD-10-CM
C50.12	Malignant neoplasm of central portion of breast, male	Diagnosis	ICD-10-CM
C50.121	Malignant neoplasm of central portion of right male breast	Diagnosis	ICD-10-CM
C50.122	Malignant neoplasm of central portion of left male breast	Diagnosis	ICD-10-CM
C50.129	Malignant neoplasm of central portion of unspecified male breast	Diagnosis	ICD-10-CM
C50.2	Malignant neoplasm of upper-inner quadrant of breast	Diagnosis	ICD-10-CM
C50.21	Malignant neoplasm of upper-inner quadrant of breast, female	Diagnosis	ICD-10-CM
C50.211	Malignant neoplasm of upper-inner quadrant of right female breast	Diagnosis	ICD-10-CM
C50.212	Malignant neoplasm of upper-inner quadrant of left female breast	Diagnosis	ICD-10-CM
C50.219	Malignant neoplasm of upper-inner quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.22	Malignant neoplasm of upper-inner quadrant of breast, male	Diagnosis	ICD-10-CM
C50.221	Malignant neoplasm of upper-inner quadrant of right male breast	Diagnosis	ICD-10-CM
C50.222	Malignant neoplasm of upper-inner quadrant of left male breast	Diagnosis	ICD-10-CM
C50.229	Malignant neoplasm of upper-inner quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.3	Malignant neoplasm of lower-inner quadrant of breast	Diagnosis	ICD-10-CM
C50.31	Malignant neoplasm of lower-inner quadrant of breast, female	Diagnosis	ICD-10-CM
C50.311	Malignant neoplasm of lower-inner quadrant of right female breast	Diagnosis	ICD-10-CM
C50.312	Malignant neoplasm of lower-inner quadrant of left female breast	Diagnosis	ICD-10-CM
C50.319	Malignant neoplasm of lower-inner quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.32	Malignant neoplasm of lower-inner quadrant of breast, male	Diagnosis	ICD-10-CM
C50.321	Malignant neoplasm of lower-inner quadrant of right male breast	Diagnosis	ICD-10-CM
C50.322	Malignant neoplasm of lower-inner quadrant of left male breast	Diagnosis	ICD-10-CM
C50.329	Malignant neoplasm of lower-inner quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.4	Malignant neoplasm of upper-outer quadrant of breast	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C50.41	Malignant neoplasm of upper-outer quadrant of breast, female	Diagnosis	ICD-10-CM
C50.411	Malignant neoplasm of upper-outer quadrant of right female breast	Diagnosis	ICD-10-CM
C50.412	Malignant neoplasm of upper-outer quadrant of left female breast	Diagnosis	ICD-10-CM
C50.419	Malignant neoplasm of upper-outer quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.42	Malignant neoplasm of upper-outer quadrant of breast, male	Diagnosis	ICD-10-CM
C50.421	Malignant neoplasm of upper-outer quadrant of right male breast	Diagnosis	ICD-10-CM
C50.422	Malignant neoplasm of upper-outer quadrant of left male breast	Diagnosis	ICD-10-CM
C50.429	Malignant neoplasm of upper-outer quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.5	Malignant neoplasm of lower-outer quadrant of breast	Diagnosis	ICD-10-CM
C50.51	Malignant neoplasm of lower-outer quadrant of breast, female	Diagnosis	ICD-10-CM
C50.511	Malignant neoplasm of lower-outer quadrant of right female breast	Diagnosis	ICD-10-CM
C50.512	Malignant neoplasm of lower-outer quadrant of left female breast	Diagnosis	ICD-10-CM
C50.519	Malignant neoplasm of lower-outer quadrant of unspecified female breast	Diagnosis	ICD-10-CM
C50.52	Malignant neoplasm of lower-outer quadrant of breast, male	Diagnosis	ICD-10-CM
C50.521	Malignant neoplasm of lower-outer quadrant of right male breast	Diagnosis	ICD-10-CM
C50.522	Malignant neoplasm of lower-outer quadrant of left male breast	Diagnosis	ICD-10-CM
C50.529	Malignant neoplasm of lower-outer quadrant of unspecified male breast	Diagnosis	ICD-10-CM
C50.6	Malignant neoplasm of axillary tail of breast	Diagnosis	ICD-10-CM
C50.61	Malignant neoplasm of axillary tail of breast, female	Diagnosis	ICD-10-CM
C50.611	Malignant neoplasm of axillary tail of right female breast	Diagnosis	ICD-10-CM
C50.612	Malignant neoplasm of axillary tail of left female breast	Diagnosis	ICD-10-CM
C50.619	Malignant neoplasm of axillary tail of unspecified female breast	Diagnosis	ICD-10-CM
C50.62	Malignant neoplasm of axillary tail of breast, male	Diagnosis	ICD-10-CM
C50.621	Malignant neoplasm of axillary tail of right male breast	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C50.622	Malignant neoplasm of axillary tail of left male breast	Diagnosis	ICD-10-CM
C50.629	Malignant neoplasm of axillary tail of unspecified male breast	Diagnosis	ICD-10-CM
C50.8	Malignant neoplasm of overlapping sites of breast	Diagnosis	ICD-10-CM
C50.81	Malignant neoplasm of overlapping sites of breast, female	Diagnosis	ICD-10-CM
C50.811	Malignant neoplasm of overlapping sites of right female breast	Diagnosis	ICD-10-CM
C50.812	Malignant neoplasm of overlapping sites of left female breast	Diagnosis	ICD-10-CM
C50.819	Malignant neoplasm of overlapping sites of unspecified female breast	Diagnosis	ICD-10-CM
C50.82	Malignant neoplasm of overlapping sites of breast, male	Diagnosis	ICD-10-CM
C50.821	Malignant neoplasm of overlapping sites of right male breast	Diagnosis	ICD-10-CM
C50.822	Malignant neoplasm of overlapping sites of left male breast	Diagnosis	ICD-10-CM
C50.829	Malignant neoplasm of overlapping sites of unspecified male breast	Diagnosis	ICD-10-CM
C50.9	Malignant neoplasm of breast of unspecified site	Diagnosis	ICD-10-CM
C50.91	Malignant neoplasm of breast of unspecified site, female	Diagnosis	ICD-10-CM
C50.911	Malignant neoplasm of unspecified site of right female breast	Diagnosis	ICD-10-CM
C50.912	Malignant neoplasm of unspecified site of left female breast	Diagnosis	ICD-10-CM
C50.919	Malignant neoplasm of unspecified site of unspecified female breast	Diagnosis	ICD-10-CM
C50.92	Malignant neoplasm of breast of unspecified site, male	Diagnosis	ICD-10-CM
C50.921	Malignant neoplasm of unspecified site of right male breast	Diagnosis	ICD-10-CM
C50.922	Malignant neoplasm of unspecified site of left male breast	Diagnosis	ICD-10-CM
C50.929	Malignant neoplasm of unspecified site of unspecified male breast	Diagnosis	ICD-10-CM
C51	Malignant neoplasm of vulva	Diagnosis	ICD-10-CM
C51.0	Malignant neoplasm of labium majus	Diagnosis	ICD-10-CM
C51.1	Malignant neoplasm of labium minus	Diagnosis	ICD-10-CM
C51.2	Malignant neoplasm of clitoris	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C51.8	Malignant neoplasm of overlapping sites of vulva	Diagnosis	ICD-10-CM
C51.9	Malignant neoplasm of vulva, unspecified	Diagnosis	ICD-10-CM
C52	Malignant neoplasm of vagina	Diagnosis	ICD-10-CM
C53	Malignant neoplasm of cervix uteri	Diagnosis	ICD-10-CM
C53.0	Malignant neoplasm of endocervix	Diagnosis	ICD-10-CM
C53.1	Malignant neoplasm of exocervix	Diagnosis	ICD-10-CM
C53.8	Malignant neoplasm of overlapping sites of cervix uteri	Diagnosis	ICD-10-CM
C53.9	Malignant neoplasm of cervix uteri, unspecified	Diagnosis	ICD-10-CM
C54	Malignant neoplasm of corpus uteri	Diagnosis	ICD-10-CM
C54.0	Malignant neoplasm of isthmus uteri	Diagnosis	ICD-10-CM
C54.1	Malignant neoplasm of endometrium	Diagnosis	ICD-10-CM
C54.2	Malignant neoplasm of myometrium	Diagnosis	ICD-10-CM
C54.3	Malignant neoplasm of fundus uteri	Diagnosis	ICD-10-CM
C54.8	Malignant neoplasm of overlapping sites of corpus uteri	Diagnosis	ICD-10-CM
C54.9	Malignant neoplasm of corpus uteri, unspecified	Diagnosis	ICD-10-CM
C55	Malignant neoplasm of uterus, part unspecified	Diagnosis	ICD-10-CM
C56	Malignant neoplasm of ovary	Diagnosis	ICD-10-CM
C56.1	Malignant neoplasm of right ovary	Diagnosis	ICD-10-CM
C56.2	Malignant neoplasm of left ovary	Diagnosis	ICD-10-CM
C56.9	Malignant neoplasm of unspecified ovary	Diagnosis	ICD-10-CM
C57	Malignant neoplasm of other and unspecified female genital organs	Diagnosis	ICD-10-CM
C57.0	Malignant neoplasm of fallopian tube	Diagnosis	ICD-10-CM
C57.00	Malignant neoplasm of unspecified fallopian tube	Diagnosis	ICD-10-CM
C57.01	Malignant neoplasm of right fallopian tube	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C57.02	Malignant neoplasm of left fallopian tube	Diagnosis	ICD-10-CM
C57.1	Malignant neoplasm of broad ligament	Diagnosis	ICD-10-CM
C57.10	Malignant neoplasm of unspecified broad ligament	Diagnosis	ICD-10-CM
C57.11	Malignant neoplasm of right broad ligament	Diagnosis	ICD-10-CM
C57.12	Malignant neoplasm of left broad ligament	Diagnosis	ICD-10-CM
C57.2	Malignant neoplasm of round ligament	Diagnosis	ICD-10-CM
C57.20	Malignant neoplasm of unspecified round ligament	Diagnosis	ICD-10-CM
C57.21	Malignant neoplasm of right round ligament	Diagnosis	ICD-10-CM
C57.22	Malignant neoplasm of left round ligament	Diagnosis	ICD-10-CM
C57.3	Malignant neoplasm of parametrium	Diagnosis	ICD-10-CM
C57.4	Malignant neoplasm of uterine adnexa, unspecified	Diagnosis	ICD-10-CM
C57.7	Malignant neoplasm of other specified female genital organs	Diagnosis	ICD-10-CM
C57.8	Malignant neoplasm of overlapping sites of female genital organs	Diagnosis	ICD-10-CM
C57.9	Malignant neoplasm of female genital organ, unspecified	Diagnosis	ICD-10-CM
C58	Malignant neoplasm of placenta	Diagnosis	ICD-10-CM
C60	Malignant neoplasm of penis	Diagnosis	ICD-10-CM
C60.0	Malignant neoplasm of prepuce	Diagnosis	ICD-10-CM
C60.1	Malignant neoplasm of glans penis	Diagnosis	ICD-10-CM
C60.2	Malignant neoplasm of body of penis	Diagnosis	ICD-10-CM
C60.8	Malignant neoplasm of overlapping sites of penis	Diagnosis	ICD-10-CM
C60.9	Malignant neoplasm of penis, unspecified	Diagnosis	ICD-10-CM
C61	Malignant neoplasm of prostate	Diagnosis	ICD-10-CM
C62	Malignant neoplasm of testis	Diagnosis	ICD-10-CM
C62.0	Malignant neoplasm of undescended testis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C62.00	Malignant neoplasm of unspecified undescended testis	Diagnosis	ICD-10-CM
C62.01	Malignant neoplasm of undescended right testis	Diagnosis	ICD-10-CM
C62.02	Malignant neoplasm of undescended left testis	Diagnosis	ICD-10-CM
C62.1	Malignant neoplasm of descended testis	Diagnosis	ICD-10-CM
C62.10	Malignant neoplasm of unspecified descended testis	Diagnosis	ICD-10-CM
C62.11	Malignant neoplasm of descended right testis	Diagnosis	ICD-10-CM
C62.12	Malignant neoplasm of descended left testis	Diagnosis	ICD-10-CM
C62.9	Malignant neoplasm of testis, unspecified whether descended or undescended	Diagnosis	ICD-10-CM
C62.90	Malignant neoplasm of unspecified testis, unspecified whether descended or undescended	Diagnosis	ICD-10-CM
C62.91	Malignant neoplasm of right testis, unspecified whether descended or undescended	Diagnosis	ICD-10-CM
C62.92	Malignant neoplasm of left testis, unspecified whether descended or undescended	Diagnosis	ICD-10-CM
C63	Malignant neoplasm of other and unspecified male genital organs	Diagnosis	ICD-10-CM
C63.0	Malignant neoplasm of epididymis	Diagnosis	ICD-10-CM
C63.00	Malignant neoplasm of unspecified epididymis	Diagnosis	ICD-10-CM
C63.01	Malignant neoplasm of right epididymis	Diagnosis	ICD-10-CM
C63.02	Malignant neoplasm of left epididymis	Diagnosis	ICD-10-CM
C63.1	Malignant neoplasm of spermatic cord	Diagnosis	ICD-10-CM
C63.10	Malignant neoplasm of unspecified spermatic cord	Diagnosis	ICD-10-CM
C63.11	Malignant neoplasm of right spermatic cord	Diagnosis	ICD-10-CM
C63.12	Malignant neoplasm of left spermatic cord	Diagnosis	ICD-10-CM
C63.2	Malignant neoplasm of scrotum	Diagnosis	ICD-10-CM
C63.7	Malignant neoplasm of other specified male genital organs	Diagnosis	ICD-10-CM
C63.8	Malignant neoplasm of overlapping sites of male genital organs	Diagnosis	ICD-10-CM
C63.9	Malignant neoplasm of male genital organ, unspecified	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C64	Malignant neoplasm of kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.1	Malignant neoplasm of right kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.2	Malignant neoplasm of left kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.9	Malignant neoplasm of unspecified kidney, except renal pelvis	Diagnosis	ICD-10-CM
C65	Malignant neoplasm of renal pelvis	Diagnosis	ICD-10-CM
C65.1	Malignant neoplasm of right renal pelvis	Diagnosis	ICD-10-CM
C65.2	Malignant neoplasm of left renal pelvis	Diagnosis	ICD-10-CM
C65.9	Malignant neoplasm of unspecified renal pelvis	Diagnosis	ICD-10-CM
C66	Malignant neoplasm of ureter	Diagnosis	ICD-10-CM
C66.1	Malignant neoplasm of right ureter	Diagnosis	ICD-10-CM
C66.2	Malignant neoplasm of left ureter	Diagnosis	ICD-10-CM
C66.9	Malignant neoplasm of unspecified ureter	Diagnosis	ICD-10-CM
C67	Malignant neoplasm of bladder	Diagnosis	ICD-10-CM
C67.0	Malignant neoplasm of trigone of bladder	Diagnosis	ICD-10-CM
C67.1	Malignant neoplasm of dome of bladder	Diagnosis	ICD-10-CM
C67.2	Malignant neoplasm of lateral wall of bladder	Diagnosis	ICD-10-CM
C67.3	Malignant neoplasm of anterior wall of bladder	Diagnosis	ICD-10-CM
C67.4	Malignant neoplasm of posterior wall of bladder	Diagnosis	ICD-10-CM
C67.5	Malignant neoplasm of bladder neck	Diagnosis	ICD-10-CM
C67.6	Malignant neoplasm of ureteric orifice	Diagnosis	ICD-10-CM
C67.7	Malignant neoplasm of urachus	Diagnosis	ICD-10-CM
C67.8	Malignant neoplasm of overlapping sites of bladder	Diagnosis	ICD-10-CM
C67.9	Malignant neoplasm of bladder, unspecified	Diagnosis	ICD-10-CM
C68	Malignant neoplasm of other and unspecified urinary organs	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C68.0	Malignant neoplasm of urethra	Diagnosis	ICD-10-CM
C68.1	Malignant neoplasm of paraurethral glands	Diagnosis	ICD-10-CM
C68.8	Malignant neoplasm of overlapping sites of urinary organs	Diagnosis	ICD-10-CM
C68.9	Malignant neoplasm of urinary organ, unspecified	Diagnosis	ICD-10-CM
C69	Malignant neoplasm of eye and adnexa	Diagnosis	ICD-10-CM
C69.0	Malignant neoplasm of conjunctiva	Diagnosis	ICD-10-CM
C69.00	Malignant neoplasm of unspecified conjunctiva	Diagnosis	ICD-10-CM
C69.01	Malignant neoplasm of right conjunctiva	Diagnosis	ICD-10-CM
C69.02	Malignant neoplasm of left conjunctiva	Diagnosis	ICD-10-CM
C69.1	Malignant neoplasm of cornea	Diagnosis	ICD-10-CM
C69.10	Malignant neoplasm of unspecified cornea	Diagnosis	ICD-10-CM
C69.11	Malignant neoplasm of right cornea	Diagnosis	ICD-10-CM
C69.12	Malignant neoplasm of left cornea	Diagnosis	ICD-10-CM
C69.2	Malignant neoplasm of retina	Diagnosis	ICD-10-CM
C69.20	Malignant neoplasm of unspecified retina	Diagnosis	ICD-10-CM
C69.21	Malignant neoplasm of right retina	Diagnosis	ICD-10-CM
C69.22	Malignant neoplasm of left retina	Diagnosis	ICD-10-CM
C69.3	Malignant neoplasm of choroid	Diagnosis	ICD-10-CM
C69.30	Malignant neoplasm of unspecified choroid	Diagnosis	ICD-10-CM
C69.31	Malignant neoplasm of right choroid	Diagnosis	ICD-10-CM
C69.32	Malignant neoplasm of left choroid	Diagnosis	ICD-10-CM
C69.4	Malignant neoplasm of ciliary body	Diagnosis	ICD-10-CM
C69.40	Malignant neoplasm of unspecified ciliary body	Diagnosis	ICD-10-CM
C69.41	Malignant neoplasm of right ciliary body	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C69.42	Malignant neoplasm of left ciliary body	Diagnosis	ICD-10-CM
C69.5	Malignant neoplasm of lacrimal gland and duct	Diagnosis	ICD-10-CM
C69.50	Malignant neoplasm of unspecified lacrimal gland and duct	Diagnosis	ICD-10-CM
C69.51	Malignant neoplasm of right lacrimal gland and duct	Diagnosis	ICD-10-CM
C69.52	Malignant neoplasm of left lacrimal gland and duct	Diagnosis	ICD-10-CM
C69.6	Malignant neoplasm of orbit	Diagnosis	ICD-10-CM
C69.60	Malignant neoplasm of unspecified orbit	Diagnosis	ICD-10-CM
C69.61	Malignant neoplasm of right orbit	Diagnosis	ICD-10-CM
C69.62	Malignant neoplasm of left orbit	Diagnosis	ICD-10-CM
C69.8	Malignant neoplasm of overlapping sites of eye and adnexa	Diagnosis	ICD-10-CM
C69.80	Malignant neoplasm of overlapping sites of unspecified eye and adnexa	Diagnosis	ICD-10-CM
C69.81	Malignant neoplasm of overlapping sites of right eye and adnexa	Diagnosis	ICD-10-CM
C69.82	Malignant neoplasm of overlapping sites of left eye and adnexa	Diagnosis	ICD-10-CM
C69.9	Malignant neoplasm of unspecified site of eye	Diagnosis	ICD-10-CM
C69.90	Malignant neoplasm of unspecified site of unspecified eye	Diagnosis	ICD-10-CM
C69.91	Malignant neoplasm of unspecified site of right eye	Diagnosis	ICD-10-CM
C69.92	Malignant neoplasm of unspecified site of left eye	Diagnosis	ICD-10-CM
C70	Malignant neoplasm of meninges	Diagnosis	ICD-10-CM
C70.0	Malignant neoplasm of cerebral meninges	Diagnosis	ICD-10-CM
C70.1	Malignant neoplasm of spinal meninges	Diagnosis	ICD-10-CM
C70.9	Malignant neoplasm of meninges, unspecified	Diagnosis	ICD-10-CM
C71	Malignant neoplasm of brain	Diagnosis	ICD-10-CM
C71.0	Malignant neoplasm of cerebrum, except lobes and ventricles	Diagnosis	ICD-10-CM
C71.1	Malignant neoplasm of frontal lobe	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C71.2	Malignant neoplasm of temporal lobe	Diagnosis	ICD-10-CM
C71.3	Malignant neoplasm of parietal lobe	Diagnosis	ICD-10-CM
C71.4	Malignant neoplasm of occipital lobe	Diagnosis	ICD-10-CM
C71.5	Malignant neoplasm of cerebral ventricle	Diagnosis	ICD-10-CM
C71.6	Malignant neoplasm of cerebellum	Diagnosis	ICD-10-CM
C71.7	Malignant neoplasm of brain stem	Diagnosis	ICD-10-CM
C71.8	Malignant neoplasm of overlapping sites of brain	Diagnosis	ICD-10-CM
C71.9	Malignant neoplasm of brain, unspecified	Diagnosis	ICD-10-CM
C72	Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system	Diagnosis	ICD-10-CM
C72.0	Malignant neoplasm of spinal cord	Diagnosis	ICD-10-CM
C72.1	Malignant neoplasm of cauda equina	Diagnosis	ICD-10-CM
C72.2	Malignant neoplasm of olfactory nerve	Diagnosis	ICD-10-CM
C72.20	Malignant neoplasm of unspecified olfactory nerve	Diagnosis	ICD-10-CM
C72.21	Malignant neoplasm of right olfactory nerve	Diagnosis	ICD-10-CM
C72.22	Malignant neoplasm of left olfactory nerve	Diagnosis	ICD-10-CM
C72.3	Malignant neoplasm of optic nerve	Diagnosis	ICD-10-CM
C72.30	Malignant neoplasm of unspecified optic nerve	Diagnosis	ICD-10-CM
C72.31	Malignant neoplasm of right optic nerve	Diagnosis	ICD-10-CM
C72.32	Malignant neoplasm of left optic nerve	Diagnosis	ICD-10-CM
C72.4	Malignant neoplasm of acoustic nerve	Diagnosis	ICD-10-CM
C72.40	Malignant neoplasm of unspecified acoustic nerve	Diagnosis	ICD-10-CM
C72.41	Malignant neoplasm of right acoustic nerve	Diagnosis	ICD-10-CM
C72.42	Malignant neoplasm of left acoustic nerve	Diagnosis	ICD-10-CM
C72.5	Malignant neoplasm of other and unspecified cranial nerves	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C72.50	Malignant neoplasm of unspecified cranial nerve	Diagnosis	ICD-10-CM
C72.59	Malignant neoplasm of other cranial nerves	Diagnosis	ICD-10-CM
C72.9	Malignant neoplasm of central nervous system, unspecified	Diagnosis	ICD-10-CM
C73	Malignant neoplasm of thyroid gland	Diagnosis	ICD-10-CM
C74	Malignant neoplasm of adrenal gland	Diagnosis	ICD-10-CM
C74.0	Malignant neoplasm of cortex of adrenal gland	Diagnosis	ICD-10-CM
C74.00	Malignant neoplasm of cortex of unspecified adrenal gland	Diagnosis	ICD-10-CM
C74.01	Malignant neoplasm of cortex of right adrenal gland	Diagnosis	ICD-10-CM
C74.02	Malignant neoplasm of cortex of left adrenal gland	Diagnosis	ICD-10-CM
C74.1	Malignant neoplasm of medulla of adrenal gland	Diagnosis	ICD-10-CM
C74.10	Malignant neoplasm of medulla of unspecified adrenal gland	Diagnosis	ICD-10-CM
C74.11	Malignant neoplasm of medulla of right adrenal gland	Diagnosis	ICD-10-CM
C74.12	Malignant neoplasm of medulla of left adrenal gland	Diagnosis	ICD-10-CM
C74.9	Malignant neoplasm of unspecified part of adrenal gland	Diagnosis	ICD-10-CM
C74.90	Malignant neoplasm of unspecified part of unspecified adrenal gland	Diagnosis	ICD-10-CM
C74.91	Malignant neoplasm of unspecified part of right adrenal gland	Diagnosis	ICD-10-CM
C74.92	Malignant neoplasm of unspecified part of left adrenal gland	Diagnosis	ICD-10-CM
C75	Malignant neoplasm of other endocrine glands and related structures	Diagnosis	ICD-10-CM
C75.0	Malignant neoplasm of parathyroid gland	Diagnosis	ICD-10-CM
C75.1	Malignant neoplasm of pituitary gland	Diagnosis	ICD-10-CM
C75.2	Malignant neoplasm of craniopharyngeal duct	Diagnosis	ICD-10-CM
C75.3	Malignant neoplasm of pineal gland	Diagnosis	ICD-10-CM
C75.4	Malignant neoplasm of carotid body	Diagnosis	ICD-10-CM
C75.5	Malignant neoplasm of aortic body and other paraganglia	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C75.8	Malignant neoplasm with pluriglandular involvement, unspecified	Diagnosis	ICD-10-CM
C75.9	Malignant neoplasm of endocrine gland, unspecified	Diagnosis	ICD-10-CM
C76	Malignant neoplasm of other and ill-defined sites	Diagnosis	ICD-10-CM
C76.0	Malignant neoplasm of head, face and neck	Diagnosis	ICD-10-CM
C76.1	Malignant neoplasm of thorax	Diagnosis	ICD-10-CM
C76.2	Malignant neoplasm of abdomen	Diagnosis	ICD-10-CM
C76.3	Malignant neoplasm of pelvis	Diagnosis	ICD-10-CM
C76.4	Malignant neoplasm of upper limb	Diagnosis	ICD-10-CM
C76.40	Malignant neoplasm of unspecified upper limb	Diagnosis	ICD-10-CM
C76.41	Malignant neoplasm of right upper limb	Diagnosis	ICD-10-CM
C76.42	Malignant neoplasm of left upper limb	Diagnosis	ICD-10-CM
C76.5	Malignant neoplasm of lower limb	Diagnosis	ICD-10-CM
C76.50	Malignant neoplasm of unspecified lower limb	Diagnosis	ICD-10-CM
C76.51	Malignant neoplasm of right lower limb	Diagnosis	ICD-10-CM
C76.52	Malignant neoplasm of left lower limb	Diagnosis	ICD-10-CM
C76.8	Malignant neoplasm of other specified ill-defined sites	Diagnosis	ICD-10-CM
C77	Secondary and unspecified malignant neoplasm of lymph nodes	Diagnosis	ICD-10-CM
C77.0	Secondary and unspecified malignant neoplasm of lymph nodes of head, face and neck	Diagnosis	ICD-10-CM
C77.1	Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C77.2	Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C77.3	Secondary and unspecified malignant neoplasm of axilla and upper limb lymph nodes	Diagnosis	ICD-10-CM
C77.4	Secondary and unspecified malignant neoplasm of inguinal and lower limb lymph nodes	Diagnosis	ICD-10-CM
C77.5	Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C77.8	Secondary and unspecified malignant neoplasm of lymph nodes of multiple regions	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C77.9	Secondary and unspecified malignant neoplasm of lymph node, unspecified	Diagnosis	ICD-10-CM
C78	Secondary malignant neoplasm of respiratory and digestive organs	Diagnosis	ICD-10-CM
C78.0	Secondary malignant neoplasm of lung	Diagnosis	ICD-10-CM
C78.00	Secondary malignant neoplasm of unspecified lung	Diagnosis	ICD-10-CM
C78.01	Secondary malignant neoplasm of right lung	Diagnosis	ICD-10-CM
C78.02	Secondary malignant neoplasm of left lung	Diagnosis	ICD-10-CM
C78.1	Secondary malignant neoplasm of mediastinum	Diagnosis	ICD-10-CM
C78.2	Secondary malignant neoplasm of pleura	Diagnosis	ICD-10-CM
C78.3	Secondary malignant neoplasm of other and unspecified respiratory organs	Diagnosis	ICD-10-CM
C78.30	Secondary malignant neoplasm of unspecified respiratory organ	Diagnosis	ICD-10-CM
C78.39	Secondary malignant neoplasm of other respiratory organs	Diagnosis	ICD-10-CM
C78.4	Secondary malignant neoplasm of small intestine	Diagnosis	ICD-10-CM
C78.5	Secondary malignant neoplasm of large intestine and rectum	Diagnosis	ICD-10-CM
C78.6	Secondary malignant neoplasm of retroperitoneum and peritoneum	Diagnosis	ICD-10-CM
C78.7	Secondary malignant neoplasm of liver and intrahepatic bile duct	Diagnosis	ICD-10-CM
C78.8	Secondary malignant neoplasm of other and unspecified digestive organs	Diagnosis	ICD-10-CM
C78.80	Secondary malignant neoplasm of unspecified digestive organ	Diagnosis	ICD-10-CM
C78.89	Secondary malignant neoplasm of other digestive organs	Diagnosis	ICD-10-CM
C79	Secondary malignant neoplasm of other and unspecified sites	Diagnosis	ICD-10-CM
C79.0	Secondary malignant neoplasm of kidney and renal pelvis	Diagnosis	ICD-10-CM
C79.00	Secondary malignant neoplasm of unspecified kidney and renal pelvis	Diagnosis	ICD-10-CM
C79.01	Secondary malignant neoplasm of right kidney and renal pelvis	Diagnosis	ICD-10-CM
C79.02	Secondary malignant neoplasm of left kidney and renal pelvis	Diagnosis	ICD-10-CM
C79.1	Secondary malignant neoplasm of bladder and other and unspecified urinary organs	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C79.10	Secondary malignant neoplasm of unspecified urinary organs	Diagnosis	ICD-10-CM
C79.11	Secondary malignant neoplasm of bladder	Diagnosis	ICD-10-CM
C79.19	Secondary malignant neoplasm of other urinary organs	Diagnosis	ICD-10-CM
C79.2	Secondary malignant neoplasm of skin	Diagnosis	ICD-10-CM
C79.3	Secondary malignant neoplasm of brain and cerebral meninges	Diagnosis	ICD-10-CM
C79.31	Secondary malignant neoplasm of brain	Diagnosis	ICD-10-CM
C79.32	Secondary malignant neoplasm of cerebral meninges	Diagnosis	ICD-10-CM
C79.4	Secondary malignant neoplasm of other and unspecified parts of nervous system	Diagnosis	ICD-10-CM
C79.40	Secondary malignant neoplasm of unspecified part of nervous system	Diagnosis	ICD-10-CM
C79.49	Secondary malignant neoplasm of other parts of nervous system	Diagnosis	ICD-10-CM
C79.5	Secondary malignant neoplasm of bone and bone marrow	Diagnosis	ICD-10-CM
C79.51	Secondary malignant neoplasm of bone	Diagnosis	ICD-10-CM
C79.52	Secondary malignant neoplasm of bone marrow	Diagnosis	ICD-10-CM
C79.6	Secondary malignant neoplasm of ovary	Diagnosis	ICD-10-CM
C79.60	Secondary malignant neoplasm of unspecified ovary	Diagnosis	ICD-10-CM
C79.61	Secondary malignant neoplasm of right ovary	Diagnosis	ICD-10-CM
C79.62	Secondary malignant neoplasm of left ovary	Diagnosis	ICD-10-CM
C79.7	Secondary malignant neoplasm of adrenal gland	Diagnosis	ICD-10-CM
C79.70	Secondary malignant neoplasm of unspecified adrenal gland	Diagnosis	ICD-10-CM
C79.71	Secondary malignant neoplasm of right adrenal gland	Diagnosis	ICD-10-CM
C79.72	Secondary malignant neoplasm of left adrenal gland	Diagnosis	ICD-10-CM
C79.8	Secondary malignant neoplasm of other specified sites	Diagnosis	ICD-10-CM
C79.81	Secondary malignant neoplasm of breast	Diagnosis	ICD-10-CM
C79.82	Secondary malignant neoplasm of genital organs	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C79.89	Secondary malignant neoplasm of other specified sites	Diagnosis	ICD-10-CM
C79.9	Secondary malignant neoplasm of unspecified site	Diagnosis	ICD-10-CM
C7A	Malignant neuroendocrine tumors	Diagnosis	ICD-10-CM
C7A.0	Malignant carcinoid tumors	Diagnosis	ICD-10-CM
C7A.00	Malignant carcinoid tumor of unspecified site	Diagnosis	ICD-10-CM
C7A.01	Malignant carcinoid tumors of the small intestine	Diagnosis	ICD-10-CM
C7A.010	Malignant carcinoid tumor of the duodenum	Diagnosis	ICD-10-CM
C7A.011	Malignant carcinoid tumor of the jejunum	Diagnosis	ICD-10-CM
C7A.012	Malignant carcinoid tumor of the ileum	Diagnosis	ICD-10-CM
C7A.019	Malignant carcinoid tumor of the small intestine, unspecified portion	Diagnosis	ICD-10-CM
C7A.02	Malignant carcinoid tumors of the appendix, large intestine, and rectum	Diagnosis	ICD-10-CM
C7A.020	Malignant carcinoid tumor of the appendix	Diagnosis	ICD-10-CM
C7A.021	Malignant carcinoid tumor of the cecum	Diagnosis	ICD-10-CM
C7A.022	Malignant carcinoid tumor of the ascending colon	Diagnosis	ICD-10-CM
C7A.023	Malignant carcinoid tumor of the transverse colon	Diagnosis	ICD-10-CM
C7A.024	Malignant carcinoid tumor of the descending colon	Diagnosis	ICD-10-CM
C7A.025	Malignant carcinoid tumor of the sigmoid colon	Diagnosis	ICD-10-CM
C7A.026	Malignant carcinoid tumor of the rectum	Diagnosis	ICD-10-CM
C7A.029	Malignant carcinoid tumor of the large intestine, unspecified portion	Diagnosis	ICD-10-CM
C7A.09	Malignant carcinoid tumors of other sites	Diagnosis	ICD-10-CM
C7A.090	Malignant carcinoid tumor of the bronchus and lung	Diagnosis	ICD-10-CM
C7A.091	Malignant carcinoid tumor of the thymus	Diagnosis	ICD-10-CM
C7A.092	Malignant carcinoid tumor of the stomach	Diagnosis	ICD-10-CM
C7A.093	Malignant carcinoid tumor of the kidney	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C7A.094	Malignant carcinoid tumor of the foregut, unspecified	Diagnosis	ICD-10-CM
C7A.095	Malignant carcinoid tumor of the midgut, unspecified	Diagnosis	ICD-10-CM
C7A.096	Malignant carcinoid tumor of the hindgut, unspecified	Diagnosis	ICD-10-CM
C7A.098	Malignant carcinoid tumors of other sites	Diagnosis	ICD-10-CM
C7A.1	Malignant poorly differentiated neuroendocrine tumors	Diagnosis	ICD-10-CM
C7A.8	Other malignant neuroendocrine tumors	Diagnosis	ICD-10-CM
C7B	Secondary neuroendocrine tumors	Diagnosis	ICD-10-CM
C7B.0	Secondary carcinoid tumors	Diagnosis	ICD-10-CM
C7B.00	Secondary carcinoid tumors, unspecified site	Diagnosis	ICD-10-CM
C7B.01	Secondary carcinoid tumors of distant lymph nodes	Diagnosis	ICD-10-CM
C7B.02	Secondary carcinoid tumors of liver	Diagnosis	ICD-10-CM
C7B.03	Secondary carcinoid tumors of bone	Diagnosis	ICD-10-CM
C7B.04	Secondary carcinoid tumors of peritoneum	Diagnosis	ICD-10-CM
C7B.09	Secondary carcinoid tumors of other sites	Diagnosis	ICD-10-CM
C7B.1	Secondary Merkel cell carcinoma	Diagnosis	ICD-10-CM
C7B.8	Other secondary neuroendocrine tumors	Diagnosis	ICD-10-CM
C80	Malignant neoplasm without specification of site	Diagnosis	ICD-10-CM
C80.0	Disseminated malignant neoplasm, unspecified	Diagnosis	ICD-10-CM
C80.1	Malignant (primary) neoplasm, unspecified	Diagnosis	ICD-10-CM
C80.2	Malignant neoplasm associated with transplanted organ	Diagnosis	ICD-10-CM
C81	Hodgkin lymphoma	Diagnosis	ICD-10-CM
C81.0	Nodular lymphocyte predominant Hodgkin lymphoma	Diagnosis	ICD-10-CM
C81.00	Nodular lymphocyte predominant Hodgkin lymphoma, unspecified site	Diagnosis	ICD-10-CM
C81.01	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C81.02	Nodular lymphocyte predominant Hodgkin lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C81.03	Nodular lymphocyte predominant Hodgkin lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C81.04	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C81.05	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C81.06	Nodular lymphocyte predominant Hodgkin lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C81.07	Nodular lymphocyte predominant Hodgkin lymphoma, spleen	Diagnosis	ICD-10-CM
C81.08	Nodular lymphocyte predominant Hodgkin lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C81.09	Nodular lymphocyte predominant Hodgkin lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C81.1	Nodular sclerosis Hodgkin lymphoma	Diagnosis	ICD-10-CM
C81.10	Nodular sclerosis Hodgkin lymphoma, unspecified site	Diagnosis	ICD-10-CM
C81.11	Nodular sclerosis Hodgkin lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C81.12	Nodular sclerosis Hodgkin lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C81.13	Nodular sclerosis Hodgkin lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C81.14	Nodular sclerosis Hodgkin lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C81.15	Nodular sclerosis Hodgkin lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C81.16	Nodular sclerosis Hodgkin lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C81.17	Nodular sclerosis Hodgkin lymphoma, spleen	Diagnosis	ICD-10-CM
C81.18	Nodular sclerosis Hodgkin lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C81.19	Nodular sclerosis Hodgkin lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C81.2	Mixed cellularity Hodgkin lymphoma	Diagnosis	ICD-10-CM
C81.20	Mixed cellularity Hodgkin lymphoma, unspecified site	Diagnosis	ICD-10-CM
C81.21	Mixed cellularity Hodgkin lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C81.22	Mixed cellularity Hodgkin lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C81.23	Mixed cellularity Hodgkin lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C81.24	Mixed cellularity Hodgkin lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C81.25	Mixed cellularity Hodgkin lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C81.26	Mixed cellularity Hodgkin lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C81.27	Mixed cellularity Hodgkin lymphoma, spleen	Diagnosis	ICD-10-CM
C81.28	Mixed cellularity Hodgkin lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C81.29	Mixed cellularity Hodgkin lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C81.3	Lymphocyte depleted Hodgkin lymphoma	Diagnosis	ICD-10-CM
C81.30	Lymphocyte depleted Hodgkin lymphoma, unspecified site	Diagnosis	ICD-10-CM
C81.31	Lymphocyte depleted Hodgkin lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C81.32	Lymphocyte depleted Hodgkin lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C81.33	Lymphocyte depleted Hodgkin lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C81.34	Lymphocyte depleted Hodgkin lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C81.35	Lymphocyte depleted Hodgkin lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C81.36	Lymphocyte depleted Hodgkin lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C81.37	Lymphocyte depleted Hodgkin lymphoma, spleen	Diagnosis	ICD-10-CM
C81.38	Lymphocyte depleted Hodgkin lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C81.39	Lymphocyte depleted Hodgkin lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C81.4	Lymphocyte-rich Hodgkin lymphoma	Diagnosis	ICD-10-CM
C81.40	Lymphocyte-rich Hodgkin lymphoma, unspecified site	Diagnosis	ICD-10-CM
C81.41	Lymphocyte-rich Hodgkin lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C81.42	Lymphocyte-rich Hodgkin lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C81.43	Lymphocyte-rich Hodgkin lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C81.44	Lymphocyte-rich Hodgkin lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
C81.45	Lymphocyte-rich Hodgkin lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C81.46	Lymphocyte-rich Hodgkin lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C81.47	Lymphocyte-rich Hodgkin lymphoma, spleen	Diagnosis	ICD-10-CM
C81.48	Lymphocyte-rich Hodgkin lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C81.49	Lymphocyte-rich Hodgkin lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C81.7	Other Hodgkin lymphoma	Diagnosis	ICD-10-CM
C81.70	Other Hodgkin lymphoma, unspecified site	Diagnosis	ICD-10-CM
C81.71	Other Hodgkin lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C81.72	Other Hodgkin lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C81.73	Other Hodgkin lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C81.74	Other Hodgkin lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C81.75	Other Hodgkin lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C81.76	Other Hodgkin lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C81.77	Other Hodgkin lymphoma, spleen	Diagnosis	ICD-10-CM
C81.78	Other Hodgkin lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C81.79	Other Hodgkin lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C81.9	Hodgkin lymphoma, unspecified	Diagnosis	ICD-10-CM
C81.90	Hodgkin lymphoma, unspecified, unspecified site	Diagnosis	ICD-10-CM
C81.91	Hodgkin lymphoma, unspecified, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C81.92	Hodgkin lymphoma, unspecified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C81.93	Hodgkin lymphoma, unspecified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C81.94	Hodgkin lymphoma, unspecified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C81.95	Hodgkin lymphoma, unspecified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C81.96	Hodgkin lymphoma, unspecified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C81.97	Hodgkin lymphoma, unspecified, spleen	Diagnosis	ICD-10-CM
C81.98	Hodgkin lymphoma, unspecified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C81.99	Hodgkin lymphoma, unspecified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82	Follicular lymphoma	Diagnosis	ICD-10-CM
C82.0	Follicular lymphoma grade I	Diagnosis	ICD-10-CM
C82.00	Follicular lymphoma grade I, unspecified site	Diagnosis	ICD-10-CM
C82.01	Follicular lymphoma grade I, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.02	Follicular lymphoma grade I, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.03	Follicular lymphoma grade I, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.04	Follicular lymphoma grade I, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.05	Follicular lymphoma grade I, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.06	Follicular lymphoma grade I, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.07	Follicular lymphoma grade I, spleen	Diagnosis	ICD-10-CM
C82.08	Follicular lymphoma grade I, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.09	Follicular lymphoma grade I, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82.1	Follicular lymphoma grade II	Diagnosis	ICD-10-CM
C82.10	Follicular lymphoma grade II, unspecified site	Diagnosis	ICD-10-CM
C82.11	Follicular lymphoma grade II, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.12	Follicular lymphoma grade II, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.13	Follicular lymphoma grade II, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.14	Follicular lymphoma grade II, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.15	Follicular lymphoma grade II, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.16	Follicular lymphoma grade II, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.17	Follicular lymphoma grade II, spleen	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C82.18	Follicular lymphoma grade II, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.19	Follicular lymphoma grade II, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82.2	Follicular lymphoma grade III, unspecified	Diagnosis	ICD-10-CM
C82.20	Follicular lymphoma grade III, unspecified, unspecified site	Diagnosis	ICD-10-CM
C82.21	Follicular lymphoma grade III, unspecified, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.22	Follicular lymphoma grade III, unspecified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.23	Follicular lymphoma grade III, unspecified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.24	Follicular lymphoma grade III, unspecified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.25	Follicular lymphoma grade III, unspecified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.26	Follicular lymphoma grade III, unspecified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.27	Follicular lymphoma grade III, unspecified, spleen	Diagnosis	ICD-10-CM
C82.28	Follicular lymphoma grade III, unspecified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.29	Follicular lymphoma grade III, unspecified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82.3	Follicular lymphoma grade IIIa	Diagnosis	ICD-10-CM
C82.30	Follicular lymphoma grade IIIa, unspecified site	Diagnosis	ICD-10-CM
C82.31	Follicular lymphoma grade IIIa, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.32	Follicular lymphoma grade IIIa, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.33	Follicular lymphoma grade IIIa, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.34	Follicular lymphoma grade IIIa, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.35	Follicular lymphoma grade IIIa, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.36	Follicular lymphoma grade IIIa, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.37	Follicular lymphoma grade IIIa, spleen	Diagnosis	ICD-10-CM
C82.38	Follicular lymphoma grade IIIa, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.39	Follicular lymphoma grade IIIa, extranodal and solid organ sites	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C82.4	Follicular lymphoma grade IIIb	Diagnosis	ICD-10-CM
C82.40	Follicular lymphoma grade IIIb, unspecified site	Diagnosis	ICD-10-CM
C82.41	Follicular lymphoma grade IIIb, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.42	Follicular lymphoma grade IIIb, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.43	Follicular lymphoma grade IIIb, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.44	Follicular lymphoma grade IIIb, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.45	Follicular lymphoma grade IIIb, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.46	Follicular lymphoma grade IIIb, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.47	Follicular lymphoma grade IIIb, spleen	Diagnosis	ICD-10-CM
C82.48	Follicular lymphoma grade IIIb, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.49	Follicular lymphoma grade IIIb, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82.5	Diffuse follicle center lymphoma	Diagnosis	ICD-10-CM
C82.50	Diffuse follicle center lymphoma, unspecified site	Diagnosis	ICD-10-CM
C82.51	Diffuse follicle center lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.52	Diffuse follicle center lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.53	Diffuse follicle center lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.54	Diffuse follicle center lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.55	Diffuse follicle center lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.56	Diffuse follicle center lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.57	Diffuse follicle center lymphoma, spleen	Diagnosis	ICD-10-CM
C82.58	Diffuse follicle center lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.59	Diffuse follicle center lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82.6	Cutaneous follicle center lymphoma	Diagnosis	ICD-10-CM
C82.60	Cutaneous follicle center lymphoma, unspecified site	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C82.61	Cutaneous follicle center lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.62	Cutaneous follicle center lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.63	Cutaneous follicle center lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.64	Cutaneous follicle center lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.65	Cutaneous follicle center lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.66	Cutaneous follicle center lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.67	Cutaneous follicle center lymphoma, spleen	Diagnosis	ICD-10-CM
C82.68	Cutaneous follicle center lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.69	Cutaneous follicle center lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82.8	Other types of follicular lymphoma	Diagnosis	ICD-10-CM
C82.80	Other types of follicular lymphoma, unspecified site	Diagnosis	ICD-10-CM
C82.81	Other types of follicular lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.82	Other types of follicular lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C82.83	Other types of follicular lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.84	Other types of follicular lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.85	Other types of follicular lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.86	Other types of follicular lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.87	Other types of follicular lymphoma, spleen	Diagnosis	ICD-10-CM
C82.88	Other types of follicular lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.89	Other types of follicular lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C82.9	Follicular lymphoma, unspecified	Diagnosis	ICD-10-CM
C82.90	Follicular lymphoma, unspecified, unspecified site	Diagnosis	ICD-10-CM
C82.91	Follicular lymphoma, unspecified, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C82.92	Follicular lymphoma, unspecified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C82.93	Follicular lymphoma, unspecified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C82.94	Follicular lymphoma, unspecified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C82.95	Follicular lymphoma, unspecified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C82.96	Follicular lymphoma, unspecified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C82.97	Follicular lymphoma, unspecified, spleen	Diagnosis	ICD-10-CM
C82.98	Follicular lymphoma, unspecified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C82.99	Follicular lymphoma, unspecified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C83	Non-follicular lymphoma	Diagnosis	ICD-10-CM
C83.0	Small cell B-cell lymphoma	Diagnosis	ICD-10-CM
C83.00	Small cell B-cell lymphoma, unspecified site	Diagnosis	ICD-10-CM
C83.01	Small cell B-cell lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C83.02	Small cell B-cell lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C83.03	Small cell B-cell lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C83.04	Small cell B-cell lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C83.05	Small cell B-cell lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C83.06	Small cell B-cell lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C83.07	Small cell B-cell lymphoma, spleen	Diagnosis	ICD-10-CM
C83.08	Small cell B-cell lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C83.09	Small cell B-cell lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C83.1	Mantle cell lymphoma	Diagnosis	ICD-10-CM
C83.10	Mantle cell lymphoma, unspecified site	Diagnosis	ICD-10-CM
C83.11	Mantle cell lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C83.12	Mantle cell lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C83.13	Mantle cell lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C83.14	Mantle cell lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C83.15	Mantle cell lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C83.16	Mantle cell lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C83.17	Mantle cell lymphoma, spleen	Diagnosis	ICD-10-CM
C83.18	Mantle cell lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C83.19	Mantle cell lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C83.3	Diffuse large B-cell lymphoma	Diagnosis	ICD-10-CM
C83.30	Diffuse large B-cell lymphoma, unspecified site	Diagnosis	ICD-10-CM
C83.31	Diffuse large B-cell lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C83.32	Diffuse large B-cell lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C83.33	Diffuse large B-cell lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C83.34	Diffuse large B-cell lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C83.35	Diffuse large B-cell lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C83.36	Diffuse large B-cell lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C83.37	Diffuse large B-cell lymphoma, spleen	Diagnosis	ICD-10-CM
C83.38	Diffuse large B-cell lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C83.39	Diffuse large B-cell lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C83.5	Lymphoblastic (diffuse) lymphoma	Diagnosis	ICD-10-CM
C83.50	Lymphoblastic (diffuse) lymphoma, unspecified site	Diagnosis	ICD-10-CM
C83.51	Lymphoblastic (diffuse) lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C83.52	Lymphoblastic (diffuse) lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C83.53	Lymphoblastic (diffuse) lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C83.54	Lymphoblastic (diffuse) lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C83.55	Lymphoblastic (diffuse) lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C83.56	Lymphoblastic (diffuse) lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C83.57	Lymphoblastic (diffuse) lymphoma, spleen	Diagnosis	ICD-10-CM
C83.58	Lymphoblastic (diffuse) lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C83.59	Lymphoblastic (diffuse) lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C83.7	Burkitt lymphoma	Diagnosis	ICD-10-CM
C83.70	Burkitt lymphoma, unspecified site	Diagnosis	ICD-10-CM
C83.71	Burkitt lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C83.72	Burkitt lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C83.73	Burkitt lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C83.74	Burkitt lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C83.75	Burkitt lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C83.76	Burkitt lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C83.77	Burkitt lymphoma, spleen	Diagnosis	ICD-10-CM
C83.78	Burkitt lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C83.79	Burkitt lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C83.8	Other non-follicular lymphoma	Diagnosis	ICD-10-CM
C83.80	Other non-follicular lymphoma, unspecified site	Diagnosis	ICD-10-CM
C83.81	Other non-follicular lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C83.82	Other non-follicular lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C83.83	Other non-follicular lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C83.84	Other non-follicular lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C83.85	Other non-follicular lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C83.86	Other non-follicular lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C83.87	Other non-follicular lymphoma, spleen	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C83.88	Other non-follicular lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C83.89	Other non-follicular lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C83.9	Non-follicular (diffuse) lymphoma, unspecified	Diagnosis	ICD-10-CM
C83.90	Non-follicular (diffuse) lymphoma, unspecified, unspecified site	Diagnosis	ICD-10-CM
C83.91	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C83.92	Non-follicular (diffuse) lymphoma, unspecified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C83.93	Non-follicular (diffuse) lymphoma, unspecified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C83.94	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C83.95	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C83.96	Non-follicular (diffuse) lymphoma, unspecified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C83.97	Non-follicular (diffuse) lymphoma, unspecified, spleen	Diagnosis	ICD-10-CM
C83.98	Non-follicular (diffuse) lymphoma, unspecified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C83.99	Non-follicular (diffuse) lymphoma, unspecified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84	Mature T/NK-cell lymphomas	Diagnosis	ICD-10-CM
C84.0	Mycosis fungoides	Diagnosis	ICD-10-CM
C84.00	Mycosis fungoides, unspecified site	Diagnosis	ICD-10-CM
C84.01	Mycosis fungoides, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C84.02	Mycosis fungoides, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.03	Mycosis fungoides, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C84.04	Mycosis fungoides, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.05	Mycosis fungoides, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.06	Mycosis fungoides, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.07	Mycosis fungoides, spleen	Diagnosis	ICD-10-CM
C84.08	Mycosis fungoides, lymph nodes of multiple sites	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C84.09	Mycosis fungoides, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84.1	Sezary disease	Diagnosis	ICD-10-CM
C84.10	Sezary disease, unspecified site	Diagnosis	ICD-10-CM
C84.11	Sezary disease, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C84.12	Sezary disease, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.13	Sezary disease, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C84.14	Sezary disease, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.15	Sezary disease, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.16	Sezary disease, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.17	Sezary disease, spleen	Diagnosis	ICD-10-CM
C84.18	Sezary disease, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C84.19	Sezary disease, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84.4	Peripheral T-cell lymphoma, not classified	Diagnosis	ICD-10-CM
C84.40	Peripheral T-cell lymphoma, not classified, unspecified site	Diagnosis	ICD-10-CM
C84.41	Peripheral T-cell lymphoma, not classified, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C84.42	Peripheral T-cell lymphoma, not classified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.43	Peripheral T-cell lymphoma, not classified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C84.44	Peripheral T-cell lymphoma, not classified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.45	Peripheral T-cell lymphoma, not classified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.46	Peripheral T-cell lymphoma, not classified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.47	Peripheral T-cell lymphoma, not classified, spleen	Diagnosis	ICD-10-CM
C84.48	Peripheral T-cell lymphoma, not classified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C84.49	Peripheral T-cell lymphoma, not classified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84.6	Anaplastic large cell lymphoma, ALK-positive	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C84.60	Anaplastic large cell lymphoma, ALK-positive, unspecified site	Diagnosis	ICD-10-CM
C84.61	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C84.62	Anaplastic large cell lymphoma, ALK-positive, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.63	Anaplastic large cell lymphoma, ALK-positive, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C84.64	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.65	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.66	Anaplastic large cell lymphoma, ALK-positive, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.67	Anaplastic large cell lymphoma, ALK-positive, spleen	Diagnosis	ICD-10-CM
C84.68	Anaplastic large cell lymphoma, ALK-positive, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C84.69	Anaplastic large cell lymphoma, ALK-positive, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84.7	Anaplastic large cell lymphoma, ALK-negative	Diagnosis	ICD-10-CM
C84.70	Anaplastic large cell lymphoma, ALK-negative, unspecified site	Diagnosis	ICD-10-CM
C84.71	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C84.72	Anaplastic large cell lymphoma, ALK-negative, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.73	Anaplastic large cell lymphoma, ALK-negative, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C84.74	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.75	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.76	Anaplastic large cell lymphoma, ALK-negative, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.77	Anaplastic large cell lymphoma, ALK-negative, spleen	Diagnosis	ICD-10-CM
C84.78	Anaplastic large cell lymphoma, ALK-negative, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C84.79	Anaplastic large cell lymphoma, ALK-negative, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84.9	Mature T/NK-cell lymphomas, unspecified	Diagnosis	ICD-10-CM
C84.90	Mature T/NK-cell lymphomas, unspecified, unspecified site	Diagnosis	ICD-10-CM
C84.91	Mature T/NK-cell lymphomas, unspecified, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C84.92	Mature T/NK-cell lymphomas, unspecified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.93	Mature T/NK-cell lymphomas, unspecified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C84.94	Mature T/NK-cell lymphomas, unspecified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.95	Mature T/NK-cell lymphomas, unspecified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.96	Mature T/NK-cell lymphomas, unspecified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.97	Mature T/NK-cell lymphomas, unspecified, spleen	Diagnosis	ICD-10-CM
C84.98	Mature T/NK-cell lymphomas, unspecified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C84.99	Mature T/NK-cell lymphomas, unspecified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84.A	Cutaneous T-cell lymphoma, unspecified	Diagnosis	ICD-10-CM
C84.A0	Cutaneous T-cell lymphoma, unspecified, unspecified site	Diagnosis	ICD-10-CM
C84.A1	Cutaneous T-cell lymphoma, unspecified lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C84.A2	Cutaneous T-cell lymphoma, unspecified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.A3	Cutaneous T-cell lymphoma, unspecified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C84.A4	Cutaneous T-cell lymphoma, unspecified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.A5	Cutaneous T-cell lymphoma, unspecified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.A6	Cutaneous T-cell lymphoma, unspecified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.A7	Cutaneous T-cell lymphoma, unspecified, spleen	Diagnosis	ICD-10-CM
C84.A8	Cutaneous T-cell lymphoma, unspecified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C84.A9	Cutaneous T-cell lymphoma, unspecified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C84.Z	Other mature T/NK-cell lymphomas	Diagnosis	ICD-10-CM
C84.Z0	Other mature T/NK-cell lymphomas, unspecified site	Diagnosis	ICD-10-CM
C84.Z1	Other mature T/NK-cell lymphomas, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C84.Z2	Other mature T/NK-cell lymphomas, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C84.Z3	Other mature T/NK-cell lymphomas, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C84.Z4	Other mature T/NK-cell lymphomas, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C84.Z5	Other mature T/NK-cell lymphomas, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C84.Z6	Other mature T/NK-cell lymphomas, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C84.Z7	Other mature T/NK-cell lymphomas, spleen	Diagnosis	ICD-10-CM
C84.Z8	Other mature T/NK-cell lymphomas, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C84.Z9	Other mature T/NK-cell lymphomas, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C85	Other specified and unspecified types of non-Hodgkin lymphoma	Diagnosis	ICD-10-CM
C85.1	Unspecified B-cell lymphoma	Diagnosis	ICD-10-CM
C85.10	Unspecified B-cell lymphoma, unspecified site	Diagnosis	ICD-10-CM
C85.11	Unspecified B-cell lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C85.12	Unspecified B-cell lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C85.13	Unspecified B-cell lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C85.14	Unspecified B-cell lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C85.15	Unspecified B-cell lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C85.16	Unspecified B-cell lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C85.17	Unspecified B-cell lymphoma, spleen	Diagnosis	ICD-10-CM
C85.18	Unspecified B-cell lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C85.19	Unspecified B-cell lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C85.2	Mediastinal (thymic) large B-cell lymphoma	Diagnosis	ICD-10-CM
C85.20	Mediastinal (thymic) large B-cell lymphoma, unspecified site	Diagnosis	ICD-10-CM
C85.21	Mediastinal (thymic) large B-cell lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C85.22	Mediastinal (thymic) large B-cell lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C85.23	Mediastinal (thymic) large B-cell lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C85.24	Mediastinal (thymic) large B-cell lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C85.25	Mediastinal (thymic) large B-cell lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C85.26	Mediastinal (thymic) large B-cell lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C85.27	Mediastinal (thymic) large B-cell lymphoma, spleen	Diagnosis	ICD-10-CM
C85.28	Mediastinal (thymic) large B-cell lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C85.29	Mediastinal (thymic) large B-cell lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C85.8	Other specified types of non-Hodgkin lymphoma	Diagnosis	ICD-10-CM
C85.80	Other specified types of non-Hodgkin lymphoma, unspecified site	Diagnosis	ICD-10-CM
C85.81	Other specified types of non-Hodgkin lymphoma, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C85.82	Other specified types of non-Hodgkin lymphoma, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C85.83	Other specified types of non-Hodgkin lymphoma, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C85.84	Other specified types of non-Hodgkin lymphoma, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C85.85	Other specified types of non-Hodgkin lymphoma, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C85.86	Other specified types of non-Hodgkin lymphoma, intrapelvic lymph nodes	Diagnosis	ICD-10-CM
C85.87	Other specified types of non-Hodgkin lymphoma, spleen	Diagnosis	ICD-10-CM
C85.88	Other specified types of non-Hodgkin lymphoma, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C85.89	Other specified types of non-Hodgkin lymphoma, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C85.9	Non-Hodgkin lymphoma, unspecified	Diagnosis	ICD-10-CM
C85.90	Non-Hodgkin lymphoma, unspecified, unspecified site	Diagnosis	ICD-10-CM
C85.91	Non-Hodgkin lymphoma, unspecified, lymph nodes of head, face, and neck	Diagnosis	ICD-10-CM
C85.92	Non-Hodgkin lymphoma, unspecified, intrathoracic lymph nodes	Diagnosis	ICD-10-CM
C85.93	Non-Hodgkin lymphoma, unspecified, intra-abdominal lymph nodes	Diagnosis	ICD-10-CM
C85.94	Non-Hodgkin lymphoma, unspecified, lymph nodes of axilla and upper limb	Diagnosis	ICD-10-CM
C85.95	Non-Hodgkin lymphoma, unspecified, lymph nodes of inguinal region and lower limb	Diagnosis	ICD-10-CM
C85.96	Non-Hodgkin lymphoma, unspecified, intrapelvic lymph nodes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C85.97	Non-Hodgkin lymphoma, unspecified, spleen	Diagnosis	ICD-10-CM
C85.98	Non-Hodgkin lymphoma, unspecified, lymph nodes of multiple sites	Diagnosis	ICD-10-CM
C85.99	Non-Hodgkin lymphoma, unspecified, extranodal and solid organ sites	Diagnosis	ICD-10-CM
C86	Other specified types of T/NK-cell lymphoma	Diagnosis	ICD-10-CM
C86.0	Extranodal NK/T-cell lymphoma, nasal type	Diagnosis	ICD-10-CM
C86.1	Hepatosplenic T-cell lymphoma	Diagnosis	ICD-10-CM
C86.2	Enteropathy-type (intestinal) T-cell lymphoma	Diagnosis	ICD-10-CM
C86.3	Subcutaneous panniculitis-like T-cell lymphoma	Diagnosis	ICD-10-CM
C86.4	Blastic NK-cell lymphoma	Diagnosis	ICD-10-CM
C86.5	Angioimmunoblastic T-cell lymphoma	Diagnosis	ICD-10-CM
C86.6	Primary cutaneous CD30-positive T-cell proliferations	Diagnosis	ICD-10-CM
C88	Malignant immunoproliferative diseases and certain other B-cell lymphomas	Diagnosis	ICD-10-CM
C88.0	Waldenstrom macroglobulinemia	Diagnosis	ICD-10-CM
C88.2	Heavy chain disease	Diagnosis	ICD-10-CM
C88.3	Immunoproliferative small intestinal disease	Diagnosis	ICD-10-CM
C88.4	Extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue [MALT-lymphoma]	Diagnosis	ICD-10-CM
C88.8	Other malignant immunoproliferative diseases	Diagnosis	ICD-10-CM
C88.9	Malignant immunoproliferative disease, unspecified	Diagnosis	ICD-10-CM
C90	Multiple myeloma and malignant plasma cell neoplasms	Diagnosis	ICD-10-CM
C90.0	Multiple myeloma	Diagnosis	ICD-10-CM
C90.00	Multiple myeloma not having achieved remission	Diagnosis	ICD-10-CM
C90.01	Multiple myeloma in remission	Diagnosis	ICD-10-CM
C90.02	Multiple myeloma in relapse	Diagnosis	ICD-10-CM
C90.1	Plasma cell leukemia	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C90.10	Plasma cell leukemia not having achieved remission	Diagnosis	ICD-10-CM
C90.11	Plasma cell leukemia in remission	Diagnosis	ICD-10-CM
C90.12	Plasma cell leukemia in relapse	Diagnosis	ICD-10-CM
C90.2	Extramedullary plasmacytoma	Diagnosis	ICD-10-CM
C90.20	Extramedullary plasmacytoma not having achieved remission	Diagnosis	ICD-10-CM
C90.21	Extramedullary plasmacytoma in remission	Diagnosis	ICD-10-CM
C90.22	Extramedullary plasmacytoma in relapse	Diagnosis	ICD-10-CM
C90.3	Solitary plasmacytoma	Diagnosis	ICD-10-CM
C90.30	Solitary plasmacytoma not having achieved remission	Diagnosis	ICD-10-CM
C90.31	Solitary plasmacytoma in remission	Diagnosis	ICD-10-CM
C90.32	Solitary plasmacytoma in relapse	Diagnosis	ICD-10-CM
C91	Lymphoid leukemia	Diagnosis	ICD-10-CM
C91.0	Acute lymphoblastic leukemia [ALL]	Diagnosis	ICD-10-CM
C91.00	Acute lymphoblastic leukemia not having achieved remission	Diagnosis	ICD-10-CM
C91.01	Acute lymphoblastic leukemia, in remission	Diagnosis	ICD-10-CM
C91.02	Acute lymphoblastic leukemia, in relapse	Diagnosis	ICD-10-CM
C91.1	Chronic lymphocytic leukemia of B-cell type	Diagnosis	ICD-10-CM
C91.10	Chronic lymphocytic leukemia of B-cell type not having achieved remission	Diagnosis	ICD-10-CM
C91.11	Chronic lymphocytic leukemia of B-cell type in remission	Diagnosis	ICD-10-CM
C91.12	Chronic lymphocytic leukemia of B-cell type in relapse	Diagnosis	ICD-10-CM
C91.3	Prolymphocytic leukemia of B-cell type	Diagnosis	ICD-10-CM
C91.30	Prolymphocytic leukemia of B-cell type not having achieved remission	Diagnosis	ICD-10-CM
C91.31	Prolymphocytic leukemia of B-cell type, in remission	Diagnosis	ICD-10-CM
C91.32	Prolymphocytic leukemia of B-cell type, in relapse	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C91.4	Hairy cell leukemia	Diagnosis	ICD-10-CM
C91.40	Hairy cell leukemia not having achieved remission	Diagnosis	ICD-10-CM
C91.41	Hairy cell leukemia, in remission	Diagnosis	ICD-10-CM
C91.42	Hairy cell leukemia, in relapse	Diagnosis	ICD-10-CM
C91.5	Adult T-cell lymphoma/leukemia (HTLV-1-associated)	Diagnosis	ICD-10-CM
C91.50	Adult T-cell lymphoma/leukemia (HTLV-1-associated) not having achieved remission	Diagnosis	ICD-10-CM
C91.51	Adult T-cell lymphoma/leukemia (HTLV-1-associated), in remission	Diagnosis	ICD-10-CM
C91.52	Adult T-cell lymphoma/leukemia (HTLV-1-associated), in relapse	Diagnosis	ICD-10-CM
C91.6	Prolymphocytic leukemia of T-cell type	Diagnosis	ICD-10-CM
C91.60	Prolymphocytic leukemia of T-cell type not having achieved remission	Diagnosis	ICD-10-CM
C91.61	Prolymphocytic leukemia of T-cell type, in remission	Diagnosis	ICD-10-CM
C91.62	Prolymphocytic leukemia of T-cell type, in relapse	Diagnosis	ICD-10-CM
C91.9	Lymphoid leukemia, unspecified	Diagnosis	ICD-10-CM
C91.90	Lymphoid leukemia, unspecified not having achieved remission	Diagnosis	ICD-10-CM
C91.91	Lymphoid leukemia, unspecified, in remission	Diagnosis	ICD-10-CM
C91.92	Lymphoid leukemia, unspecified, in relapse	Diagnosis	ICD-10-CM
C91.A	Mature B-cell leukemia Burkitt-type	Diagnosis	ICD-10-CM
C91.A0	Mature B-cell leukemia Burkitt-type not having achieved remission	Diagnosis	ICD-10-CM
C91.A1	Mature B-cell leukemia Burkitt-type, in remission	Diagnosis	ICD-10-CM
C91.A2	Mature B-cell leukemia Burkitt-type, in relapse	Diagnosis	ICD-10-CM
C91.Z	Other lymphoid leukemia	Diagnosis	ICD-10-CM
C91.Z0	Other lymphoid leukemia not having achieved remission	Diagnosis	ICD-10-CM
C91.Z1	Other lymphoid leukemia, in remission	Diagnosis	ICD-10-CM
C91.Z2	Other lymphoid leukemia, in relapse	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C92	Myeloid leukemia	Diagnosis	ICD-10-CM
C92.0	Acute myeloblastic leukemia	Diagnosis	ICD-10-CM
C92.00	Acute myeloblastic leukemia, not having achieved remission	Diagnosis	ICD-10-CM
C92.01	Acute myeloblastic leukemia, in remission	Diagnosis	ICD-10-CM
C92.02	Acute myeloblastic leukemia, in relapse	Diagnosis	ICD-10-CM
C92.1	Chronic myeloid leukemia, BCR/ABL-positive	Diagnosis	ICD-10-CM
C92.10	Chronic myeloid leukemia, BCR/ABL-positive, not having achieved remission	Diagnosis	ICD-10-CM
C92.11	Chronic myeloid leukemia, BCR/ABL-positive, in remission	Diagnosis	ICD-10-CM
C92.12	Chronic myeloid leukemia, BCR/ABL-positive, in relapse	Diagnosis	ICD-10-CM
C92.2	Atypical chronic myeloid leukemia, BCR/ABL-negative	Diagnosis	ICD-10-CM
C92.20	Atypical chronic myeloid leukemia, BCR/ABL-negative, not having achieved remission	Diagnosis	ICD-10-CM
C92.21	Atypical chronic myeloid leukemia, BCR/ABL-negative, in remission	Diagnosis	ICD-10-CM
C92.22	Atypical chronic myeloid leukemia, BCR/ABL-negative, in relapse	Diagnosis	ICD-10-CM
C92.3	Myeloid sarcoma	Diagnosis	ICD-10-CM
C92.30	Myeloid sarcoma, not having achieved remission	Diagnosis	ICD-10-CM
C92.31	Myeloid sarcoma, in remission	Diagnosis	ICD-10-CM
C92.32	Myeloid sarcoma, in relapse	Diagnosis	ICD-10-CM
C92.4	Acute promyelocytic leukemia	Diagnosis	ICD-10-CM
C92.40	Acute promyelocytic leukemia, not having achieved remission	Diagnosis	ICD-10-CM
C92.41	Acute promyelocytic leukemia, in remission	Diagnosis	ICD-10-CM
C92.42	Acute promyelocytic leukemia, in relapse	Diagnosis	ICD-10-CM
C92.5	Acute myelomonocytic leukemia	Diagnosis	ICD-10-CM
C92.50	Acute myelomonocytic leukemia, not having achieved remission	Diagnosis	ICD-10-CM
C92.51	Acute myelomonocytic leukemia, in remission	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C92.52	Acute myelomonocytic leukemia, in relapse	Diagnosis	ICD-10-CM
C92.6	Acute myeloid leukemia with 11q23-abnormality	Diagnosis	ICD-10-CM
C92.60	Acute myeloid leukemia with 11q23-abnormality not having achieved remission	Diagnosis	ICD-10-CM
C92.61	Acute myeloid leukemia with 11q23-abnormality in remission	Diagnosis	ICD-10-CM
C92.62	Acute myeloid leukemia with 11q23-abnormality in relapse	Diagnosis	ICD-10-CM
C92.9	Myeloid leukemia, unspecified	Diagnosis	ICD-10-CM
C92.90	Myeloid leukemia, unspecified, not having achieved remission	Diagnosis	ICD-10-CM
C92.91	Myeloid leukemia, unspecified in remission	Diagnosis	ICD-10-CM
C92.92	Myeloid leukemia, unspecified in relapse	Diagnosis	ICD-10-CM
C92.A	Acute myeloid leukemia with multilineage dysplasia	Diagnosis	ICD-10-CM
C92.A0	Acute myeloid leukemia with multilineage dysplasia, not having achieved remission	Diagnosis	ICD-10-CM
C92.A1	Acute myeloid leukemia with multilineage dysplasia, in remission	Diagnosis	ICD-10-CM
C92.A2	Acute myeloid leukemia with multilineage dysplasia, in relapse	Diagnosis	ICD-10-CM
C92.Z	Other myeloid leukemia	Diagnosis	ICD-10-CM
C92.Z0	Other myeloid leukemia not having achieved remission	Diagnosis	ICD-10-CM
C92.Z1	Other myeloid leukemia, in remission	Diagnosis	ICD-10-CM
C92.Z2	Other myeloid leukemia, in relapse	Diagnosis	ICD-10-CM
C93	Monocytic leukemia	Diagnosis	ICD-10-CM
C93.0	Acute monoblastic/monocytic leukemia	Diagnosis	ICD-10-CM
C93.00	Acute monoblastic/monocytic leukemia, not having achieved remission	Diagnosis	ICD-10-CM
C93.01	Acute monoblastic/monocytic leukemia, in remission	Diagnosis	ICD-10-CM
C93.02	Acute monoblastic/monocytic leukemia, in relapse	Diagnosis	ICD-10-CM
C93.1	Chronic myelomonocytic leukemia	Diagnosis	ICD-10-CM
C93.10	Chronic myelomonocytic leukemia not having achieved remission	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C93.11	Chronic myelomonocytic leukemia, in remission	Diagnosis	ICD-10-CM
C93.12	Chronic myelomonocytic leukemia, in relapse	Diagnosis	ICD-10-CM
C93.3	Juvenile myelomonocytic leukemia	Diagnosis	ICD-10-CM
C93.30	Juvenile myelomonocytic leukemia, not having achieved remission	Diagnosis	ICD-10-CM
C93.31	Juvenile myelomonocytic leukemia, in remission	Diagnosis	ICD-10-CM
C93.32	Juvenile myelomonocytic leukemia, in relapse	Diagnosis	ICD-10-CM
C93.9	Monocytic leukemia, unspecified	Diagnosis	ICD-10-CM
C93.90	Monocytic leukemia, unspecified, not having achieved remission	Diagnosis	ICD-10-CM
C93.91	Monocytic leukemia, unspecified in remission	Diagnosis	ICD-10-CM
C93.92	Monocytic leukemia, unspecified in relapse	Diagnosis	ICD-10-CM
C93.Z	Other monocytic leukemia	Diagnosis	ICD-10-CM
C93.Z0	Other monocytic leukemia, not having achieved remission	Diagnosis	ICD-10-CM
C93.Z1	Other monocytic leukemia, in remission	Diagnosis	ICD-10-CM
C93.Z2	Other monocytic leukemia, in relapse	Diagnosis	ICD-10-CM
C94	Other leukemias of specified cell type	Diagnosis	ICD-10-CM
C94.0	Acute erythroid leukemia	Diagnosis	ICD-10-CM
C94.00	Acute erythroid leukemia, not having achieved remission	Diagnosis	ICD-10-CM
C94.01	Acute erythroid leukemia, in remission	Diagnosis	ICD-10-CM
C94.02	Acute erythroid leukemia, in relapse	Diagnosis	ICD-10-CM
C94.2	Acute megakaryoblastic leukemia	Diagnosis	ICD-10-CM
C94.20	Acute megakaryoblastic leukemia not having achieved remission	Diagnosis	ICD-10-CM
C94.21	Acute megakaryoblastic leukemia, in remission	Diagnosis	ICD-10-CM
C94.22	Acute megakaryoblastic leukemia, in relapse	Diagnosis	ICD-10-CM
C94.3	Mast cell leukemia	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C94.30	Mast cell leukemia not having achieved remission	Diagnosis	ICD-10-CM
C94.31	Mast cell leukemia, in remission	Diagnosis	ICD-10-CM
C94.32	Mast cell leukemia, in relapse	Diagnosis	ICD-10-CM
C94.4	Acute panmyelosis with myelofibrosis	Diagnosis	ICD-10-CM
C94.40	Acute panmyelosis with myelofibrosis not having achieved remission	Diagnosis	ICD-10-CM
C94.41	Acute panmyelosis with myelofibrosis, in remission	Diagnosis	ICD-10-CM
C94.42	Acute panmyelosis with myelofibrosis, in relapse	Diagnosis	ICD-10-CM
C94.6	Myelodysplastic disease, not classified	Diagnosis	ICD-10-CM
C94.8	Other specified leukemias	Diagnosis	ICD-10-CM
C94.80	Other specified leukemias not having achieved remission	Diagnosis	ICD-10-CM
C94.81	Other specified leukemias, in remission	Diagnosis	ICD-10-CM
C94.82	Other specified leukemias, in relapse	Diagnosis	ICD-10-CM
C95	Leukemia of unspecified cell type	Diagnosis	ICD-10-CM
C95.0	Acute leukemia of unspecified cell type	Diagnosis	ICD-10-CM
C95.00	Acute leukemia of unspecified cell type not having achieved remission	Diagnosis	ICD-10-CM
C95.01	Acute leukemia of unspecified cell type, in remission	Diagnosis	ICD-10-CM
C95.02	Acute leukemia of unspecified cell type, in relapse	Diagnosis	ICD-10-CM
C95.1	Chronic leukemia of unspecified cell type	Diagnosis	ICD-10-CM
C95.10	Chronic leukemia of unspecified cell type not having achieved remission	Diagnosis	ICD-10-CM
C95.11	Chronic leukemia of unspecified cell type, in remission	Diagnosis	ICD-10-CM
C95.12	Chronic leukemia of unspecified cell type, in relapse	Diagnosis	ICD-10-CM
C95.9	Leukemia, unspecified	Diagnosis	ICD-10-CM
C95.90	Leukemia, unspecified not having achieved remission	Diagnosis	ICD-10-CM
C95.91	Leukemia, unspecified, in remission	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C95.92	Leukemia, unspecified, in relapse	Diagnosis	ICD-10-CM
C96	Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue	Diagnosis	ICD-10-CM
C96.0	Multifocal and multisystemic (disseminated) Langerhans-cell histiocytosis	Diagnosis	ICD-10-CM
C96.2	Malignant mast cell neoplasm	Diagnosis	ICD-10-CM
C96.20	Malignant mast cell neoplasm, unspecified	Diagnosis	ICD-10-CM
C96.21	Aggressive systemic mastocytosis	Diagnosis	ICD-10-CM
C96.22	Mast cell sarcoma	Diagnosis	ICD-10-CM
C96.29	Other malignant mast cell neoplasm	Diagnosis	ICD-10-CM
C96.4	Sarcoma of dendritic cells (accessory cells)	Diagnosis	ICD-10-CM
C96.5	Multifocal and unisystemic Langerhans-cell histiocytosis	Diagnosis	ICD-10-CM
C96.6	Unifocal Langerhans-cell histiocytosis	Diagnosis	ICD-10-CM
C96.9	Malignant neoplasm of lymphoid, hematopoietic and related tissue, unspecified	Diagnosis	ICD-10-CM
C96.A	Histiocytic sarcoma	Diagnosis	ICD-10-CM
C96.Z	Other specified malignant neoplasms of lymphoid, hematopoietic and related tissue	Diagnosis	ICD-10-CM
D03.0	Melanoma in situ of lip	Diagnosis	ICD-10-CM
D03.10	Melanoma in situ of unspecified eyelid, including canthus	Diagnosis	ICD-10-CM
D03.11	Melanoma in situ of right eyelid, including canthus	Diagnosis	ICD-10-CM
D03.12	Melanoma in situ of left eyelid, including canthus	Diagnosis	ICD-10-CM
D03.20	Melanoma in situ of unspecified ear and external auricular canal	Diagnosis	ICD-10-CM
D03.21	Melanoma in situ of right ear and external auricular canal	Diagnosis	ICD-10-CM
D03.22	Melanoma in situ of left ear and external auricular canal	Diagnosis	ICD-10-CM
D03.30	Melanoma in situ of unspecified part of face	Diagnosis	ICD-10-CM
D03.39	Melanoma in situ of other parts of face	Diagnosis	ICD-10-CM
D03.4	Melanoma in situ of scalp and neck	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
D03.51	Melanoma in situ of anal skin	Diagnosis	ICD-10-CM
D03.52	Melanoma in situ of breast (skin) (soft tissue)	Diagnosis	ICD-10-CM
D03.59	Melanoma in situ of other part of trunk	Diagnosis	ICD-10-CM
D03.60	Melanoma in situ of unspecified upper limb, including shoulder	Diagnosis	ICD-10-CM
D03.61	Melanoma in situ of right upper limb, including shoulder	Diagnosis	ICD-10-CM
D03.62	Melanoma in situ of left upper limb, including shoulder	Diagnosis	ICD-10-CM
D03.70	Melanoma in situ of unspecified lower limb, including hip	Diagnosis	ICD-10-CM
D03.71	Melanoma in situ of right lower limb, including hip	Diagnosis	ICD-10-CM
D03.72	Melanoma in situ of left lower limb, including hip	Diagnosis	ICD-10-CM
D03.8	Melanoma in situ of other sites	Diagnosis	ICD-10-CM
D03.9	Melanoma in situ, unspecified	Diagnosis	ICD-10-CM
D45	Polycythemia vera	Diagnosis	ICD-10-CM
D47.1	Chronic myeloproliferative disease	Diagnosis	ICD-10-CM
D47.3	Essential (hemorrhagic) thrombocythemia	Diagnosis	ICD-10-CM
O9A.1	Malignant neoplasm complicating pregnancy, childbirth and the puerperium	Diagnosis	ICD-10-CM
O9A.11	Malignant neoplasm complicating pregnancy	Diagnosis	ICD-10-CM
O9A.111	Malignant neoplasm complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O9A.112	Malignant neoplasm complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O9A.113	Malignant neoplasm complicating pregnancy, third trimester	Diagnosis	ICD-10-CM
O9A.119	Malignant neoplasm complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O9A.12	Malignant neoplasm complicating childbirth	Diagnosis	ICD-10-CM
O9A.13	Malignant neoplasm complicating the puerperium	Diagnosis	ICD-10-CM
R97.21	Rising PSA following treatment for malignant neoplasm of prostate	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
<b>Chronic Kidney Disease</b>			
0505F	Hemodialysis plan of care documented (ESRD, P-ESRD)	Procedure	CPT-2
0507F	Peritoneal dialysis plan of care documented (ESRD)	Procedure	CPT-2
35686	Creation of distal arteriovenous fistula during lower extremity bypass surgery (non-hemodialysis) (List separately in addition to code for primary procedure)	Procedure	CPT-4
35875	Thrombectomy of arterial or venous graft (other than hemodialysis graft or fistula);	Procedure	CPT-4
35876	Thrombectomy of arterial or venous graft (other than hemodialysis graft or fistula); with revision of arterial or venous graft	Procedure	CPT-4
36488	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); percutaneous, age 2 years or under	Procedure	CPT-4
36489	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); percutaneous, over age 2	Procedure	CPT-4
36490	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); cutdown, age 2 years or under	Procedure	CPT-4
36491	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); cutdown, over age 2	Procedure	CPT-4
36800	Insertion of cannula for hemodialysis, other purpose (separate procedure); vein to vein	Procedure	CPT-4
36810	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external (Scribner type)	Procedure	CPT-4
36815	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external revision, or closure	Procedure	CPT-4
36818	Arteriovenous anastomosis, open; by upper arm cephalic vein transposition	Procedure	CPT-4
36819	Arteriovenous anastomosis, open; by upper arm basilic vein transposition	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
36820	Arteriovenous anastomosis, open; by forearm vein transposition	Procedure	CPT-4
36821	Arteriovenous anastomosis, open; direct, any site (eg, Cimino type) (separate procedure)	Procedure	CPT-4
36838	Distal revascularization and interval ligation (DRIL), upper extremity hemodialysis access (steal syndrome)	Procedure	CPT-4
36901	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report;	Procedure	CPT-4
36902	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report; with transluminal balloon angioplasty, peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary	Procedure	CPT-4
36903	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report; with transcatheter placement of intravascular stent(s), peripheral dialysis segment, including all imaging and radiological supervision and interp	Procedure	CPT-4
36904	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s);	Procedure	CPT-4

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Code	Description	Code Category	Code Type
36905	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s); with transluminal balloon angioplasty, peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty	Procedure	CPT-4
36906	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s); with transcatheter placement of intravascular stent(s), peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary to perform the stenting, and all angioplasty within the peripheral dialysis circuit	Procedure	CPT-4
36907	Transluminal balloon angioplasty, central dialysis segment, performed through dialysis circuit, including all imaging and radiological supervision and interpretation required to perform the angioplasty (List separately in addition to code for primary procedure)	Procedure	CPT-4
36908	Transcatheter placement of intravascular stent(s), central dialysis segment, performed through dialysis circuit, including all imaging and radiological supervision and interpretation required to perform the stenting, and all angioplasty in the central dialysis segment (List separately in addition to code for primary procedure)	Procedure	CPT-4
36909	Dialysis circuit permanent vascular embolization or occlusion (including main circuit or any accessory veins), endovascular, including all imaging and radiological supervision and interpretation necessary to complete the intervention (List separately in addition to code for primary procedure)	Procedure	CPT-4
37607	Ligation or banding of angioaccess arteriovenous fistula	Procedure	CPT-4
4052F	Hemodialysis via functioning arteriovenous (AV) fistula (ESRD)	Procedure	CPT-2
4053F	Hemodialysis via functioning arteriovenous (AV) graft (ESRD)	Procedure	CPT-2
4054F	Hemodialysis via catheter (ESRD)	Procedure	CPT-2
4055F	Patient receiving peritoneal dialysis (ESRD)	Procedure	CPT-2

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
49324	Laparoscopy, surgical; with insertion of tunneled intraperitoneal catheter	Procedure	CPT-4
49325	Laparoscopy, surgical; with revision of previously placed intraperitoneal cannula or catheter, with removal of intraluminal obstructive material if performed	Procedure	CPT-4
49418	Insertion of tunneled intraperitoneal catheter (eg, dialysis, intraperitoneal chemotherapy instillation, management of ascites), complete procedure, including imaging guidance, catheter placement, contrast injection when performed, and radiological supervision and interpretation, percutaneous	Procedure	CPT-4
49419	Insertion of tunneled intraperitoneal catheter, with subcutaneous port (ie, totally implantable)	Procedure	CPT-4
49421	Insertion of tunneled intraperitoneal catheter for dialysis, open	Procedure	CPT-4
49422	Removal of tunneled intraperitoneal catheter	Procedure	CPT-4
49435	Insertion of subcutaneous extension to intraperitoneal cannula or catheter with remote chest exit site (List separately in addition to code for primary procedure)	Procedure	CPT-4
90935	Hemodialysis procedure with single evaluation by a physician or other qualified health care professional	Procedure	CPT-4
90937	Hemodialysis procedure requiring repeated evaluation(s) with or without substantial revision of dialysis prescription	Procedure	CPT-4
90939	Hemodialysis access flow study to determine blood flow in grafts and arteriovenous fistulae by an indicator dilution method, hook-up; transcutaneous measurement and disconnection	Procedure	CPT-4
90940	Hemodialysis access flow study to determine blood flow in grafts and arteriovenous fistulae by an indicator method	Procedure	CPT-4
90941	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90942	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90943	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4
90944	Hemodialysis, For Acute Renal Failure And Or Intoxication,	Procedure	CPT-4

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Code	Description	Code Category	Code Type
90945	Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies), with single evaluation by a physician or other qualified health care professional	Procedure	CPT-4
90947	Dialysis procedure other than hemodialysis (eg, peritoneal dialysis, hemofiltration, or other continuous renal replacement therapies) requiring repeated evaluations by a physician or other qualified health care professional, with or without substantial revision of dialysis prescription	Procedure	CPT-4
90951	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90952	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90953	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4
90954	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4



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Code	Description	Code Category	Code Type
90955	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90956	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4
90957	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90958	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90959	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4
90960	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
90961	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	Procedure	CPT-4
90962	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 1 face-to-face visit by a physician or other qualified health care professional per month	Procedure	CPT-4
90963	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	CPT-4
90964	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	CPT-4
90965	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	Procedure	CPT-4
90966	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 20 years of age and older	Procedure	CPT-4
90967	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients younger than 2 years of age	Procedure	CPT-4
90968	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients 2-11 years of age	Procedure	CPT-4
90969	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients 12-19 years of age	Procedure	CPT-4
90970	End-stage renal disease (ESRD) related services for dialysis less than a full month of service, per day; for patients 20 years of age and older	Procedure	CPT-4
90976	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4

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Code	Description	Code Category	Code Type
90977	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90978	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90979	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90982	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90983	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90984	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90985	Peritoneal Dialysis For End-stage Renal Disease (esrd),	Procedure	CPT-4
90988	Supervision Of Hemodialysis In Hospital Or Other Facility (excluding Home Dialysis), On Monthly Basis	Procedure	CPT-4
90990	Hemodialysis Training And/or Counseling	Procedure	CPT-4
90991	Home Hemodialysis Care, Outpatient, For Those Services Either Provided By The Physician Primarily Responsible	Procedure	CPT-4
90992	Peritoneal Dialysis Training And/or Counseling	Procedure	CPT-4
90994	Supervision Of Chronic Ambulatory Peritoneal Dialysis (capd), Home Or Out-patient (monthly)	Procedure	CPT-4
90999	Unlisted dialysis procedure, inpatient or outpatient	Procedure	CPT-4
93985	Duplex scan of arterial inflow and venous outflow for preoperative vessel assessment prior to creation of hemodialysis access; complete bilateral study	Procedure	CPT-4
93986	Duplex scan of arterial inflow and venous outflow for preoperative vessel assessment prior to creation of hemodialysis access; complete unilateral study	Procedure	CPT-4
93990	Duplex scan of hemodialysis access (including arterial inflow, body of access and venous outflow)	Procedure	CPT-4
93998	Unlisted noninvasive vascular diagnostic study	Procedure	CPT-4
99512	Home visit for hemodialysis	Procedure	CPT-4
99559	Home infusion of peritoneal dialysis, per visit	Procedure	CPT-4

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Code	Description	Code Category	Code Type
A4653	Peritoneal dialysis catheter anchoring device, belt, each	Procedure	HCPCS
A4680	Activated carbon filter for hemodialysis, each	Procedure	HCPCS
A4690	Dialyzer (artificial kidneys), all types, all sizes, for hemodialysis, each	Procedure	HCPCS
A4706	Bicarbonate concentrate, solution, for hemodialysis, per gallon	Procedure	HCPCS
A4707	Bicarbonate concentrate, powder, for hemodialysis, per packet	Procedure	HCPCS
A4708	Acetate concentrate solution, for hemodialysis, per gallon	Procedure	HCPCS
A4709	Acid concentrate, solution, for hemodialysis, per gallon	Procedure	HCPCS
A4714	Treated water (deionized, distilled, or reverse osmosis) for peritoneal dialysis, per gallon	Procedure	HCPCS
A4719	"Y set" tubing for peritoneal dialysis	Procedure	HCPCS
A4720	Dialysate solution, any concentration of dextrose, fluid volume greater than 249 cc, but less than or equal to 999 cc, for peritoneal dialysis	Procedure	HCPCS
A4721	Dialysate solution, any concentration of dextrose, fluid volume greater than 999 cc but less than or equal to 1999 cc, for peritoneal dialysis	Procedure	HCPCS
A4722	Dialysate solution, any concentration of dextrose, fluid volume greater than 1999 cc but less than or equal to 2999 cc, for peritoneal dialysis	Procedure	HCPCS
A4723	Dialysate solution, any concentration of dextrose, fluid volume greater than 2999 cc but less than or equal to 3999 cc, for peritoneal dialysis	Procedure	HCPCS
A4724	Dialysate solution, any concentration of dextrose, fluid volume greater than 3999 cc but less than or equal to 4999 cc, for peritoneal dialysis	Procedure	HCPCS
A4725	Dialysate solution, any concentration of dextrose, fluid volume greater than 4999 cc but less than or equal to 5999 cc, for peritoneal dialysis	Procedure	HCPCS
A4726	Dialysate solution, any concentration of dextrose, fluid volume greater than 5999 cc, for peritoneal dialysis	Procedure	HCPCS
A4730	Fistula cannulation set for hemodialysis, each	Procedure	HCPCS

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Code	Description	Code Category	Code Type
A4740	Shunt accessory, for hemodialysis, any type, each	Procedure	HCPCS
A4750	Blood tubing, arterial or venous, for hemodialysis, each	Procedure	HCPCS
A4755	Blood tubing, arterial and venous combined, for hemodialysis, each	Procedure	HCPCS
A4760	Dialysate solution test kit, for peritoneal dialysis, any type, each	Procedure	HCPCS
A4765	Dialysate concentrate, powder, additive for peritoneal dialysis, per packet	Procedure	HCPCS
A4766	Dialysate concentrate, solution, additive for peritoneal dialysis, per 10 ml	Procedure	HCPCS
A4801	Heparin, any type, for hemodialysis, per 1000 units	Procedure	HCPCS
A4802	Protamine sulfate, for hemodialysis, per 50 mg	Procedure	HCPCS
A4820	Hemodialysis kit supplies	Procedure	HCPCS
A4860	Disposable catheter tips for peritoneal dialysis, per 10	Procedure	HCPCS
A4870	Plumbing and/or electrical work for home hemodialysis equipment	Procedure	HCPCS
A4890	Contracts, repair and maintenance, for hemodialysis equipment	Procedure	HCPCS
A4900	Continuous ambulatory peritoneal dialysis (capd) supply kit	Procedure	HCPCS
A4901	Continuous cycling peritoneal dialysis (ccpd) supply kit	Procedure	HCPCS
A4905	Intermittent peritoneal dialysis (ipd) supply kit	Procedure	HCPCS
A4918	Venous pressure clamp, for hemodialysis, each	Procedure	HCPCS
B50W	Plain Radiography / Dialysis Shunt/Fistula	Diagnosis	ICD-10-CM
B50W0ZZ	Plain Radiography of Dialysis Shunt/Fistula using High Osmolar Contrast	Diagnosis	ICD-10-CM
B50W1ZZ	Plain Radiography of Dialysis Shunt/Fistula using Low Osmolar Contrast	Diagnosis	ICD-10-CM
B50WYZZ	Plain Radiography of Dialysis Shunt/Fistula using Other Contrast	Diagnosis	ICD-10-CM
B51W	Fluoroscopy / Dialysis Shunt/Fistula	Diagnosis	ICD-10-CM
B51W0ZA	Fluoroscopy of Dialysis Shunt/Fistula using High Osmolar Contrast, Guidance	Diagnosis	ICD-10-CM
B51W0ZZ	Fluoroscopy of Dialysis Shunt/Fistula using High Osmolar Contrast	Diagnosis	ICD-10-CM
B51W1ZA	Fluoroscopy of Dialysis Shunt/Fistula using Low Osmolar Contrast, Guidance	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
B51W1ZZ	Fluoroscopy of Dialysis Shunt/Fistula using Low Osmolar Contrast	Diagnosis	ICD-10-CM
B51WYZA	Fluoroscopy of Dialysis Shunt/Fistula using Other Contrast, Guidance	Diagnosis	ICD-10-CM
B51WYZZ	Fluoroscopy of Dialysis Shunt/Fistula using Other Contrast	Diagnosis	ICD-10-CM
B51WZZA	Fluoroscopy of Dialysis Shunt/Fistula, Guidance	Diagnosis	ICD-10-CM
B51WZZZ	Fluoroscopy of Dialysis Shunt/Fistula	Diagnosis	ICD-10-CM
C1750	Catheter, hemodialysis/peritoneal, long-term	Procedure	HCPCS
C1751	Catheter, infusion, inserted peripherally, centrally or midline (other than hemodialysis)	Procedure	HCPCS
C1752	Catheter, hemodialysis/peritoneal, short-term	Procedure	HCPCS
E08.22	Diabetes mellitus due to underlying condition with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E08.29	Diabetes mellitus due to underlying condition with other diabetic kidney complication	Diagnosis	ICD-10-CM
E09.21	Drug or chemical induced diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E09.22	Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E10.21	Type 1 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E11.21	Type 2 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E11.29	Type 2 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E13.21	Other specified diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E13.22	Other specified diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E1520	Heparin infusion pump for hemodialysis	Procedure	HCPCS
E1530	Air bubble detector for hemodialysis, each, replacement	Procedure	HCPCS
E1540	Pressure alarm for hemodialysis, each, replacement	Procedure	HCPCS
E1550	Bath conductivity meter for hemodialysis, each	Procedure	HCPCS
E1560	Blood leak detector for hemodialysis, each, replacement	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E1575	Transducer protectors/fluid barriers, for hemodialysis, any size, per 10	Procedure	HCPCS
E1580	Unipuncture control system for hemodialysis	Procedure	HCPCS
E1590	Hemodialysis machine	Procedure	HCPCS
E1592	Automatic intermittent peritoneal dialysis system	Procedure	HCPCS
E1594	Cycler dialysis machine for peritoneal dialysis	Procedure	HCPCS
E1600	Delivery and/or installation charges for hemodialysis equipment	Procedure	HCPCS
E1610	Reverse osmosis water purification system, for hemodialysis	Procedure	HCPCS
E1615	Deionizer water purification system, for hemodialysis	Procedure	HCPCS
E1620	Blood pump for hemodialysis, replacement	Procedure	HCPCS
E1625	Water softening system, for hemodialysis	Procedure	HCPCS
E1630	Reciprocating peritoneal dialysis system	Procedure	HCPCS
E1634	Peritoneal dialysis clamps, each	Procedure	HCPCS
E1636	Sorbent cartridges, for hemodialysis, per 10	Procedure	HCPCS
E1638	Heating pad, for peritoneal dialysis, any size, each	Procedure	HCPCS
E1640	Replacement components for hemodialysis and/or peritoneal dialysis machines that are owned or being purchased by the patient	Procedure	HCPCS
G0365	Vessel mapping of vessels for hemodialysis access (services for preoperative vessel mapping prior to creation of hemodialysis access using an autogenous hemodialysis conduit, including arterial inflow and venous outflow)	Procedure	HCPCS
G0392	Transluminal balloon angioplasty, percutaneous; for maintenance of hemodialysis access, arteriovenous fistula or graft; arterial	Procedure	HCPCS
G0393	Transluminal balloon angioplasty, percutaneous; for maintenance of hemodialysis access, arteriovenous fistula or graft; venous	Procedure	HCPCS
G8081	ESRD patient requiring hemodialysis vascular access documented to have received autogenous AV fistula	Procedure	HCPCS
G8082	ESRD patient requiring hemodialysis documented to have received vascular access other than autogenous AV fistula	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G8085	ESRD patient requiring hemodialysis vascular access was not an eligible candidate for autogenous AV fistula	Procedure	HCPCS
G8714	Hemodialysis treatment performed exactly 3 times per week > 90 days	Procedure	HCPCS
G8715	Hemodialysis treatment performed less than 3 times per week or greater than 3 times per week	Procedure	HCPCS
G8727	Patient receiving hemodialysis, peritoneal dialysis or kidney transplantation	Procedure	HCPCS
G8956	Patient receiving maintenance hemodialysis in an outpatient dialysis facility	Procedure	HCPCS
G8957	Patient not receiving maintenance hemodialysis in an outpatient dialysis facility	Procedure	HCPCS
G9239	Documentation of reasons for patient initiating maintenance hemodialysis with a catheter as the mode of vascular access (e.g., patient has a maturing arteriovenous fistula (AVF)/arteriovenous graft (AVG), time limited trial of hemodialysis, other medical reasons, patient declined AVF/AVG, other patient reasons, patient followed by reporting nephrologist for fewer than 90 days, other system reasons)	Procedure	HCPCS
G9240	Patient whose mode of vascular access is a catheter at the time maintenance hemodialysis is initiated	Procedure	HCPCS
G9241	Patient whose mode of vascular access is not a catheter at the time maintenance hemodialysis is initiated	Procedure	HCPCS
G9264	Documentation of patient receiving maintenance hemodialysis for greater than or equal to 90 days with a catheter for documented reasons (e.g., other medical reasons, patient declined arteriovenous fistula (AVF)/arteriovenous graft (AVG), other patient reasons)	Procedure	HCPCS
G9265	Patient receiving maintenance hemodialysis for greater than or equal to 90 days with a catheter as the mode of vascular access	Procedure	HCPCS
G9266	Patient receiving maintenance hemodialysis for greater than or equal to 90 days without a catheter as the mode of vascular access	Procedure	HCPCS
G9523	Patient discontinued from hemodialysis or peritoneal dialysis	Procedure	HCPCS
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease	Diagnosis	ICD-10-CM
I12.9	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM



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Code	Description	Code Category	Code Type
I13.1	Hypertensive heart and chronic kidney disease without heart failure	Diagnosis	ICD-10-CM
I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
K0610	Peritoneal dialysis clamp, each	Procedure	HCPCS
K76.7	Hepatorenal syndrome	Diagnosis	ICD-10-CM
M32.14	Glomerular disease in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.15	Tubulo-interstitial nephropathy in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M35.04	Sicca syndrome with tubulo-interstitial nephropathy	Diagnosis	ICD-10-CM
N01.0	Rapidly progressive nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N01.1	Rapidly progressive nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N01.2	Rapidly progressive nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N01.3	Rapidly progressive nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N01.4	Rapidly progressive nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N01.5	Rapidly progressive nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N01.6	Rapidly progressive nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N01.7	Rapidly progressive nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N01.8	Rapidly progressive nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N01.9	Rapidly progressive nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N02.0	Recurrent and persistent hematuria with minor glomerular abnormality	Diagnosis	ICD-10-CM
N02.1	Recurrent and persistent hematuria with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N02.2	Recurrent and persistent hematuria with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N02.3	Recurrent and persistent hematuria with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N02.4	Recurrent and persistent hematuria with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N02.5	Recurrent and persistent hematuria with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
N02.6	Recurrent and persistent hematuria with dense deposit disease	Diagnosis	ICD-10-CM
N02.7	Recurrent and persistent hematuria with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N02.8	Recurrent and persistent hematuria with other morphologic changes	Diagnosis	ICD-10-CM
N02.9	Recurrent and persistent hematuria with unspecified morphologic changes	Diagnosis	ICD-10-CM
N03.0	Chronic nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N03.1	Chronic nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N03.2	Chronic nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N03.3	Chronic nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N03.4	Chronic nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N03.5	Chronic nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N03.6	Chronic nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N03.7	Chronic nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N03.8	Chronic nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N03.9	Chronic nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N04.0	Nephrotic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N04.1	Nephrotic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N04.2	Nephrotic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N04.3	Nephrotic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N04.4	Nephrotic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N04.5	Nephrotic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N04.6	Nephrotic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N04.7	Nephrotic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N04.8	Nephrotic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N04.9	Nephrotic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
N05.0	Unspecified nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N05.1	Unspecified nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N05.2	Unspecified nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N05.3	Unspecified nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N05.4	Unspecified nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N05.5	Unspecified nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N05.6	Unspecified nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N05.7	Unspecified nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N05.8	Unspecified nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N05.9	Unspecified nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N06.0	Isolated proteinuria with minor glomerular abnormality	Diagnosis	ICD-10-CM
N06.1	Isolated proteinuria with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N06.2	Isolated proteinuria with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N06.3	Isolated proteinuria with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N06.4	Isolated proteinuria with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N06.5	Isolated proteinuria with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N06.6	Isolated proteinuria with dense deposit disease	Diagnosis	ICD-10-CM
N06.7	Isolated proteinuria with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N06.8	Isolated proteinuria with other morphologic lesion	Diagnosis	ICD-10-CM
N06.9	Isolated proteinuria with unspecified morphologic lesion	Diagnosis	ICD-10-CM
N07.0	Hereditary nephropathy, not elsewhere classified with minor glomerular abnormality	Diagnosis	ICD-10-CM
N07.1	Hereditary nephropathy, not elsewhere classified with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N07.2	Hereditary nephropathy, not elsewhere classified with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
N07.3	Hereditary nephropathy, not elsewhere classified with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N07.4	Hereditary nephropathy, not elsewhere classified with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N07.5	Hereditary nephropathy, not elsewhere classified with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N07.6	Hereditary nephropathy, not elsewhere classified with dense deposit disease	Diagnosis	ICD-10-CM
N07.7	Hereditary nephropathy, not elsewhere classified with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N07.8	Hereditary nephropathy, not elsewhere classified with other morphologic lesions	Diagnosis	ICD-10-CM
N07.9	Hereditary nephropathy, not elsewhere classified with unspecified morphologic lesions	Diagnosis	ICD-10-CM
N08	Glomerular disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
N11.0	Nonobstructive reflux-associated chronic pyelonephritis	Diagnosis	ICD-10-CM
N11.1	Chronic obstructive pyelonephritis	Diagnosis	ICD-10-CM
N11.8	Other chronic tubulo-interstitial nephritis	Diagnosis	ICD-10-CM
N11.9	Chronic tubulo-interstitial nephritis, unspecified	Diagnosis	ICD-10-CM
N12	Tubulo-interstitial nephritis, not specified as acute or chronic	Diagnosis	ICD-10-CM
N13.0	Hydronephrosis with ureteropelvic junction obstruction	Diagnosis	ICD-10-CM
N13.4	Hydroureter	Diagnosis	ICD-10-CM
N13.5	Crossing vessel and stricture of ureter without hydronephrosis	Diagnosis	ICD-10-CM
N13.6	Pyonephrosis	Diagnosis	ICD-10-CM
N13.70	Vesicoureteral-reflux, unspecified	Diagnosis	ICD-10-CM
N13.71	Vesicoureteral-reflux without reflux nephropathy	Diagnosis	ICD-10-CM
N13.721	Vesicoureteral-reflux with reflux nephropathy without hydroureter, unilateral	Diagnosis	ICD-10-CM
N13.722	Vesicoureteral-reflux with reflux nephropathy without hydroureter, bilateral	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
N13.729	Vesicoureteral-reflux with reflux nephropathy without hydroureter, unspecified	Diagnosis	ICD-10-CM
N13.731	Vesicoureteral-reflux with reflux nephropathy with hydroureter, unilateral	Diagnosis	ICD-10-CM
N13.732	Vesicoureteral-reflux with reflux nephropathy with hydroureter, bilateral	Diagnosis	ICD-10-CM
N13.739	Vesicoureteral-reflux with reflux nephropathy with hydroureter, unspecified	Diagnosis	ICD-10-CM
N13.8	Other obstructive and reflux uropathy	Diagnosis	ICD-10-CM
N13.9	Obstructive and reflux uropathy, unspecified	Diagnosis	ICD-10-CM
N14.0	Analgesic nephropathy	Diagnosis	ICD-10-CM
N14.1	Nephropathy induced by other drugs, medicaments and biological substances	Diagnosis	ICD-10-CM
N14.2	Nephropathy induced by unspecified drug, medicament or biological substance	Diagnosis	ICD-10-CM
N14.3	Nephropathy induced by heavy metals	Diagnosis	ICD-10-CM
N14.4	Toxic nephropathy, not elsewhere classified	Diagnosis	ICD-10-CM
N15.0	Balkan nephropathy	Diagnosis	ICD-10-CM
N15.8	Other specified renal tubulo-interstitial diseases	Diagnosis	ICD-10-CM
N15.9	Renal tubulo-interstitial disease, unspecified	Diagnosis	ICD-10-CM
N16	Renal tubulo-interstitial disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
N18.1	Chronic kidney disease, stage 1	Diagnosis	ICD-10-CM
N18.2	Chronic kidney disease, stage 2 (mild)	Diagnosis	ICD-10-CM
N18.3	Chronic kidney disease, stage 3 (moderate)	Diagnosis	ICD-10-CM
N18.4	Chronic kidney disease, stage 4 (severe)	Diagnosis	ICD-10-CM
N18.5	Chronic kidney disease, stage 5	Diagnosis	ICD-10-CM
N18.6	End stage renal disease	Diagnosis	ICD-10-CM
N18.9	Chronic kidney disease, unspecified	Diagnosis	ICD-10-CM
N19	Unspecified kidney failure	Diagnosis	ICD-10-CM
N25.0	Renal osteodystrophy	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
N25.1	Nephrogenic diabetes insipidus	Diagnosis	ICD-10-CM
N25.81	Secondary hyperparathyroidism of renal origin	Diagnosis	ICD-10-CM
N25.89	Other disorders resulting from impaired renal tubular function	Diagnosis	ICD-10-CM
N25.9	Disorder resulting from impaired renal tubular function, unspecified	Diagnosis	ICD-10-CM
N26.1	Atrophy of kidney (terminal)	Diagnosis	ICD-10-CM
N26.9	Renal sclerosis, unspecified	Diagnosis	ICD-10-CM
N28.89	Other specified disorders of kidney and ureter	Diagnosis	ICD-10-CM
N28.9	Disorder of kidney and ureter, unspecified	Diagnosis	ICD-10-CM
N29	Other disorders of kidney and ureter in diseases classified elsewhere	Diagnosis	ICD-10-CM
Q61.02	Congenital multiple renal cysts	Diagnosis	ICD-10-CM
Q61.11	Cystic dilatation of collecting ducts	Diagnosis	ICD-10-CM
Q61.19	Other polycystic kidney, infantile type	Diagnosis	ICD-10-CM
Q61.2	Polycystic kidney, adult type	Diagnosis	ICD-10-CM
Q61.3	Polycystic kidney, unspecified	Diagnosis	ICD-10-CM
Q61.4	Renal dysplasia	Diagnosis	ICD-10-CM
Q61.5	Medullary cystic kidney	Diagnosis	ICD-10-CM
Q61.8	Other cystic kidney diseases	Diagnosis	ICD-10-CM
Q62.0	Congenital hydronephrosis	Diagnosis	ICD-10-CM
Q62.10	Congenital occlusion of ureter, unspecified	Diagnosis	ICD-10-CM
Q62.11	Congenital occlusion of ureteropelvic junction	Diagnosis	ICD-10-CM
Q62.12	Congenital occlusion of ureterovesical orifice	Diagnosis	ICD-10-CM
Q62.2	Congenital megaureter	Diagnosis	ICD-10-CM
Q62.31	Congenital ureterocele, orthotopic	Diagnosis	ICD-10-CM
Q62.32	Cecoureterocele	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
Q62.39	Other obstructive defects of renal pelvis and ureter	Diagnosis	ICD-10-CM
R94.4	Abnormal results of kidney function studies	Diagnosis	ICD-10-CM
S9335	Home therapy, hemodialysis; administrative services, professional pharmacy services, care coordination, and all necessary supplies and equipment (drugs and nursing services coded separately), per diem	Procedure	HCPCS
S9339	Home therapy; peritoneal dialysis, administrative services, professional pharmacy services, care coordination and all necessary supplies and equipment (drugs and nursing visits coded separately), per diem	Procedure	HCPCS
Z49.0	Preparatory care for renal dialysis	Diagnosis	ICD-10-CM
Z49.01	Encounter for fitting and adjustment of extracorporeal dialysis catheter	Diagnosis	ICD-10-CM
Z49.02	Encounter for fitting and adjustment of peritoneal dialysis catheter	Diagnosis	ICD-10-CM
Z49.3	Encounter for adequacy testing for dialysis	Diagnosis	ICD-10-CM
Z49.31	Encounter for adequacy testing for hemodialysis	Diagnosis	ICD-10-CM
Z49.32	Encounter for adequacy testing for peritoneal dialysis	Diagnosis	ICD-10-CM
Z99.2	Dependence on renal dialysis	Diagnosis	ICD-10-CM
<b>Chronic Obstructive Pulmonary Disease</b>			
J40	Bronchitis, not specified as acute or chronic	Diagnosis	ICD-10-CM
J41.0	Simple chronic bronchitis	Diagnosis	ICD-10-CM
J41.1	Mucopurulent chronic bronchitis	Diagnosis	ICD-10-CM
J41.8	Mixed simple and mucopurulent chronic bronchitis	Diagnosis	ICD-10-CM
J42	Unspecified chronic bronchitis	Diagnosis	ICD-10-CM
J43	Emphysema	Diagnosis	ICD-10-CM
J43.0	Unilateral pulmonary emphysema [MacLeod's syndrome]	Diagnosis	ICD-10-CM
J43.1	Panlobular emphysema	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
J43.2	Centrilobular emphysema	Diagnosis	ICD-10-CM
J43.8	Other emphysema	Diagnosis	ICD-10-CM
J43.9	Emphysema, unspecified	Diagnosis	ICD-10-CM
J44.0	Chronic obstructive pulmonary disease with (acute) lower respiratory infection	Diagnosis	ICD-10-CM
J44.1	Chronic obstructive pulmonary disease with (acute) exacerbation	Diagnosis	ICD-10-CM
J44.9	Chronic obstructive pulmonary disease, unspecified	Diagnosis	ICD-10-CM
J47.0	Bronchiectasis with acute lower respiratory infection	Diagnosis	ICD-10-CM
J47.1	Bronchiectasis with (acute) exacerbation	Diagnosis	ICD-10-CM
J47.9	Bronchiectasis, uncomplicated	Diagnosis	ICD-10-CM
J98.2	Interstitial emphysema	Diagnosis	ICD-10-CM
J98.3	Compensatory emphysema	Diagnosis	ICD-10-CM
P25	Interstitial emphysema and related conditions originating in the perinatal period	Diagnosis	ICD-10-CM
P25.0	Interstitial emphysema originating in the perinatal period	Diagnosis	ICD-10-CM
P25.8	Other conditions related to interstitial emphysema originating in the perinatal period	Diagnosis	ICD-10-CM
<b>Congestive Heart Failure</b>			
I09.81	Rheumatic heart failure	Diagnosis	ICD-10-CM
I11.0	Hypertensive heart disease with heart failure	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I50	Heart failure	Diagnosis	ICD-10-CM
I50.1	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
I50.2	Systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.20	Unspecified systolic (congestive) heart failure	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I50.21	Acute systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.22	Chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.23	Acute on chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.3	Diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.30	Unspecified diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.31	Acute diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.32	Chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.33	Acute on chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.4	Combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.40	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.41	Acute combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.42	Chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.43	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.8	Other heart failure	Diagnosis	ICD-10-CM
I50.81	Right heart failure	Diagnosis	ICD-10-CM
I50.810	Right heart failure, unspecified	Diagnosis	ICD-10-CM
I50.811	Acute right heart failure	Diagnosis	ICD-10-CM
I50.812	Chronic right heart failure	Diagnosis	ICD-10-CM
I50.813	Acute on chronic right heart failure	Diagnosis	ICD-10-CM
I50.814	Right heart failure due to left heart failure	Diagnosis	ICD-10-CM
I50.82	Biventricular heart failure	Diagnosis	ICD-10-CM
I50.83	High output heart failure	Diagnosis	ICD-10-CM
I50.84	End stage heart failure	Diagnosis	ICD-10-CM
I50.89	Other heart failure	Diagnosis	ICD-10-CM
I50.9	Heart failure, unspecified	Diagnosis	ICD-10-CM
I97.13	Postprocedural heart failure	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
I97.130	Postprocedural heart failure following cardiac surgery	Diagnosis	ICD-10-CM
I97.131	Postprocedural heart failure following other surgery	Diagnosis	ICD-10-CM
<b>Coronary Artery Disease</b>			
0210083	Bypass Coronary Artery, One Artery from Coronary Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0210088	Bypass Coronary Artery, One Artery from Right Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0210089	Bypass Coronary Artery, One Artery from Left Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021008C	Bypass Coronary Artery, One Artery from Thoracic Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021008F	Bypass Coronary Artery, One Artery from Abdominal Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021008W	Bypass Coronary Artery, One Artery from Aorta with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0210093	Bypass Coronary Artery, One Artery from Coronary Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0210098	Bypass Coronary Artery, One Artery from Right Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0210099	Bypass Coronary Artery, One Artery from Left Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021009C	Bypass Coronary Artery, One Artery from Thoracic Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021009F	Bypass Coronary Artery, One Artery from Abdominal Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021009W	Bypass Coronary Artery, One Artery from Aorta with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02100A3	Bypass Coronary Artery, One Artery from Coronary Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02100A8	Bypass Coronary Artery, One Artery from Right Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02100A9	Bypass Coronary Artery, One Artery from Left Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02100AC	Bypass Coronary Artery, One Artery from Thoracic Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02100AF	Bypass Coronary Artery, One Artery from Abdominal Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02100AW	Bypass Coronary Artery, One Artery from Aorta with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02100J3	Bypass Coronary Artery, One Artery from Coronary Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02100J8	Bypass Coronary Artery, One Artery from Right Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02100J9	Bypass Coronary Artery, One Artery from Left Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02100JC	Bypass Coronary Artery, One Artery from Thoracic Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02100JF	Bypass Coronary Artery, One Artery from Abdominal Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02100JW	Bypass Coronary Artery, One Artery from Aorta with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02100K3	Bypass Coronary Artery, One Artery from Coronary Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02100K8	Bypass Coronary Artery, One Artery from Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02100K9	Bypass Coronary Artery, One Artery from Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02100KC	Bypass Coronary Artery, One Artery from Thoracic Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02100KF	Bypass Coronary Artery, One Artery from Abdominal Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02100KW	Bypass Coronary Artery, One Artery from Aorta with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02100Z3	Bypass Coronary Artery, One Artery from Coronary Artery, Open Approach	Procedure	ICD-10-PCS
02100Z8	Bypass Coronary Artery, One Artery from Right Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02100Z9	Bypass Coronary Artery, One Artery from Left Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02100ZC	Bypass Coronary Artery, One Artery from Thoracic Artery, Open Approach	Procedure	ICD-10-PCS
02100ZF	Bypass Coronary Artery, One Artery from Abdominal Artery, Open Approach	Procedure	ICD-10-PCS
0210483	Bypass Coronary Artery, One Artery from Coronary Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0210488	Bypass Coronary Artery, One Artery from Right Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0210489	Bypass Coronary Artery, One Artery from Left Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021048C	Bypass Coronary Artery, One Artery from Thoracic Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021048F	Bypass Coronary Artery, One Artery from Abdominal Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021048W	Bypass Coronary Artery, One Artery from Aorta with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0210493	Bypass Coronary Artery, One Artery from Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0210498	Bypass Coronary Artery, One Artery from Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0210499	Bypass Coronary Artery, One Artery from Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
021049C	Bypass Coronary Artery, One Artery from Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021049F	Bypass Coronary Artery, One Artery from Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021049W	Bypass Coronary Artery, One Artery from Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104A3	Bypass Coronary Artery, One Artery from Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104A8	Bypass Coronary Artery, One Artery from Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104A9	Bypass Coronary Artery, One Artery from Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104AC	Bypass Coronary Artery, One Artery from Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104AF	Bypass Coronary Artery, One Artery from Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104AW	Bypass Coronary Artery, One Artery from Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104J3	Bypass Coronary Artery, One Artery from Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104J8	Bypass Coronary Artery, One Artery from Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104J9	Bypass Coronary Artery, One Artery from Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104JC	Bypass Coronary Artery, One Artery from Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104JF	Bypass Coronary Artery, One Artery from Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104JW	Bypass Coronary Artery, One Artery from Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104K3	Bypass Coronary Artery, One Artery from Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104K8	Bypass Coronary Artery, One Artery from Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02104K9	Bypass Coronary Artery, One Artery from Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104KC	Bypass Coronary Artery, One Artery from Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104KF	Bypass Coronary Artery, One Artery from Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104KW	Bypass Coronary Artery, One Artery from Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104Z3	Bypass Coronary Artery, One Artery from Coronary Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104Z8	Bypass Coronary Artery, One Artery from Right Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104Z9	Bypass Coronary Artery, One Artery from Left Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104ZC	Bypass Coronary Artery, One Artery from Thoracic Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02104ZF	Bypass Coronary Artery, One Artery from Abdominal Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0211083	Bypass Coronary Artery, Two Arteries from Coronary Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0211088	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0211089	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021108C	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021108F	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021108W	Bypass Coronary Artery, Two Arteries from Aorta with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0211093	Bypass Coronary Artery, Two Arteries from Coronary Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0211098	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0211099	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021109C	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021109F	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021109W	Bypass Coronary Artery, Two Arteries from Aorta with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
02110A3	Bypass Coronary Artery, Two Arteries from Coronary Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02110A8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02110A9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02110AC	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02110AF	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02110AW	Bypass Coronary Artery, Two Arteries from Aorta with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02110J3	Bypass Coronary Artery, Two Arteries from Coronary Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02110J8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02110J9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02110JC	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02110JF	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02110JW	Bypass Coronary Artery, Two Arteries from Aorta with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02110K3	Bypass Coronary Artery, Two Arteries from Coronary Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02110K8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02110K9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02110KC	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02110KF	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02110KW	Bypass Coronary Artery, Two Arteries from Aorta with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02110Z3	Bypass Coronary Artery, Two Arteries from Coronary Artery, Open Approach	Procedure	ICD-10-PCS
02110Z8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02110Z9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02110ZC	Bypass Coronary Artery, Two Arteries from Thoracic Artery, Open Approach	Procedure	ICD-10-PCS
02110ZF	Bypass Coronary Artery, Two Arteries from Abdominal Artery, Open Approach	Procedure	ICD-10-PCS
0211483	Bypass Coronary Artery, Two Arteries from Coronary Artery with Zooplasic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0211488	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0211489	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021148C	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021148F	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021148W	Bypass Coronary Artery, Two Arteries from Aorta with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0211493	Bypass Coronary Artery, Two Arteries from Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0211498	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0211499	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021149C	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021149F	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021149W	Bypass Coronary Artery, Two Arteries from Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114A3	Bypass Coronary Artery, Two Arteries from Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114A8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114A9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02114AC	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114AF	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114AW	Bypass Coronary Artery, Two Arteries from Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114J3	Bypass Coronary Artery, Two Arteries from Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114J8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114J9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114JC	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114JF	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114JW	Bypass Coronary Artery, Two Arteries from Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114K3	Bypass Coronary Artery, Two Arteries from Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114K8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114K9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02114KC	Bypass Coronary Artery, Two Arteries from Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114KF	Bypass Coronary Artery, Two Arteries from Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114KW	Bypass Coronary Artery, Two Arteries from Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114Z3	Bypass Coronary Artery, Two Arteries from Coronary Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114Z8	Bypass Coronary Artery, Two Arteries from Right Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114Z9	Bypass Coronary Artery, Two Arteries from Left Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114ZC	Bypass Coronary Artery, Two Arteries from Thoracic Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02114ZF	Bypass Coronary Artery, Two Arteries from Abdominal Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0212083	Bypass Coronary Artery, Three Arteries from Coronary Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0212088	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0212089	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021208C	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021208F	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
021208W	Bypass Coronary Artery, Three Arteries from Aorta with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0212093	Bypass Coronary Artery, Three Arteries from Coronary Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0212098	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0212099	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021209C	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021209F	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021209W	Bypass Coronary Artery, Three Arteries from Aorta with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
02120A3	Bypass Coronary Artery, Three Arteries from Coronary Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02120A8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02120A9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02120AC	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02120AF	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02120AW	Bypass Coronary Artery, Three Arteries from Aorta with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02120J3	Bypass Coronary Artery, Three Arteries from Coronary Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02120J8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02120J9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02120JC	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02120JF	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02120JW	Bypass Coronary Artery, Three Arteries from Aorta with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02120K3	Bypass Coronary Artery, Three Arteries from Coronary Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02120K8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02120K9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02120KC	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02120KF	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02120KW	Bypass Coronary Artery, Three Arteries from Aorta with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02120Z3	Bypass Coronary Artery, Three Arteries from Coronary Artery, Open Approach	Procedure	ICD-10-PCS
02120Z8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02120Z9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02120ZC	Bypass Coronary Artery, Three Arteries from Thoracic Artery, Open Approach	Procedure	ICD-10-PCS
02120ZF	Bypass Coronary Artery, Three Arteries from Abdominal Artery, Open Approach	Procedure	ICD-10-PCS
0212483	Bypass Coronary Artery, Three Arteries from Coronary Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0212488	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0212489	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021248C	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021248F	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021248W	Bypass Coronary Artery, Three Arteries from Aorta with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0212493	Bypass Coronary Artery, Three Arteries from Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0212498	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0212499	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021249C	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021249F	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021249W	Bypass Coronary Artery, Three Arteries from Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124A3	Bypass Coronary Artery, Three Arteries from Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02124A8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124A9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124AC	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124AF	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124AW	Bypass Coronary Artery, Three Arteries from Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124J3	Bypass Coronary Artery, Three Arteries from Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124J8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124J9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124JC	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124JF	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124JW	Bypass Coronary Artery, Three Arteries from Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124K3	Bypass Coronary Artery, Three Arteries from Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124K8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124K9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124KC	Bypass Coronary Artery, Three Arteries from Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124KF	Bypass Coronary Artery, Three Arteries from Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124KW	Bypass Coronary Artery, Three Arteries from Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124Z3	Bypass Coronary Artery, Three Arteries from Coronary Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124Z8	Bypass Coronary Artery, Three Arteries from Right Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124Z9	Bypass Coronary Artery, Three Arteries from Left Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02124ZC	Bypass Coronary Artery, Three Arteries from Thoracic Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02124ZF	Bypass Coronary Artery, Three Arteries from Abdominal Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0213083	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0213088	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0213089	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021308C	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021308F	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021308W	Bypass Coronary Artery, Four or More Arteries from Aorta with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
0213093	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0213098	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
0213099	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021309C	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021309F	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
021309W	Bypass Coronary Artery, Four or More Arteries from Aorta with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
02130A3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02130A8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02130A9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02130AC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02130AF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02130AW	Bypass Coronary Artery, Four or More Arteries from Aorta with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
02130J3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02130J8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02130J9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02130JC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02130JF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02130JW	Bypass Coronary Artery, Four or More Arteries from Aorta with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
02130K3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02130K8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02130K9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02130KC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02130KF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02130KW	Bypass Coronary Artery, Four or More Arteries from Aorta with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
02130Z3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery, Open Approach	Procedure	ICD-10-PCS
02130Z8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02130Z9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary, Open Approach	Procedure	ICD-10-PCS
02130ZC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery, Open Approach	Procedure	ICD-10-PCS
02130ZF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery, Open Approach	Procedure	ICD-10-PCS
0213483	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0213488	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0213489	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021348C	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021348F	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021348W	Bypass Coronary Artery, Four or More Arteries from Aorta with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0213493	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0213498	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0213499	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021349C	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021349F	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021349W	Bypass Coronary Artery, Four or More Arteries from Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134A3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134A8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134A9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02134AC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134AF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134AW	Bypass Coronary Artery, Four or More Arteries from Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134J3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134J8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134J9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134JC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134JF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134JW	Bypass Coronary Artery, Four or More Arteries from Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134K3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134K8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134K9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134KC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134KF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02134KW	Bypass Coronary Artery, Four or More Arteries from Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134Z3	Bypass Coronary Artery, Four or More Arteries from Coronary Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134Z8	Bypass Coronary Artery, Four or More Arteries from Right Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134Z9	Bypass Coronary Artery, Four or More Arteries from Left Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134ZC	Bypass Coronary Artery, Four or More Arteries from Thoracic Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02134ZF	Bypass Coronary Artery, Four or More Arteries from Abdominal Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021K0Z8	Bypass Right Ventricle to Right Internal Mammary, Open Approach	Procedure	ICD-10-PCS
021K0Z9	Bypass Right Ventricle to Left Internal Mammary, Open Approach	Procedure	ICD-10-PCS
021K0ZC	Bypass Right Ventricle to Thoracic Artery, Open Approach	Procedure	ICD-10-PCS
021K0ZF	Bypass Right Ventricle to Abdominal Artery, Open Approach	Procedure	ICD-10-PCS
021K0ZW	Bypass Right Ventricle to Aorta, Open Approach	Procedure	ICD-10-PCS
021K4Z8	Bypass Right Ventricle to Right Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021K4Z9	Bypass Right Ventricle to Left Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021K4ZC	Bypass Right Ventricle to Thoracic Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021K4ZF	Bypass Right Ventricle to Abdominal Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021K4ZW	Bypass Right Ventricle to Aorta, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L08P	Bypass Left Ventricle to Pulmonary Trunk with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021L08Q	Bypass Left Ventricle to Right Pulmonary Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
021L08R	Bypass Left Ventricle to Left Pulmonary Artery with Zooplastic Tissue, Open Approach	Procedure	ICD-10-PCS
021L09P	Bypass Left Ventricle to Pulmonary Trunk with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021L09Q	Bypass Left Ventricle to Right Pulmonary Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021L09R	Bypass Left Ventricle to Left Pulmonary Artery with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
021L0AP	Bypass Left Ventricle to Pulmonary Trunk with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
021L0AQ	Bypass Left Ventricle to Right Pulmonary Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
021L0AR	Bypass Left Ventricle to Left Pulmonary Artery with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
021L0JP	Bypass Left Ventricle to Pulmonary Trunk with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
021L0JQ	Bypass Left Ventricle to Right Pulmonary Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
021L0JR	Bypass Left Ventricle to Left Pulmonary Artery with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
021L0KP	Bypass Left Ventricle to Pulmonary Trunk with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
021L0KQ	Bypass Left Ventricle to Right Pulmonary Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
021L0KR	Bypass Left Ventricle to Left Pulmonary Artery with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
021L0Z8	Bypass Left Ventricle to Right Internal Mammary, Open Approach	Procedure	ICD-10-PCS
021L0Z9	Bypass Left Ventricle to Left Internal Mammary, Open Approach	Procedure	ICD-10-PCS
021L0ZC	Bypass Left Ventricle to Thoracic Artery, Open Approach	Procedure	ICD-10-PCS
021L0ZF	Bypass Left Ventricle to Abdominal Artery, Open Approach	Procedure	ICD-10-PCS
021L0ZP	Bypass Left Ventricle to Pulmonary Trunk, Open Approach	Procedure	ICD-10-PCS
021L0ZQ	Bypass Left Ventricle to Right Pulmonary Artery, Open Approach	Procedure	ICD-10-PCS
021L0ZR	Bypass Left Ventricle to Left Pulmonary Artery, Open Approach	Procedure	ICD-10-PCS
021L48P	Bypass Left Ventricle to Pulmonary Trunk with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L48Q	Bypass Left Ventricle to Right Pulmonary Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L48R	Bypass Left Ventricle to Left Pulmonary Artery with Zooplastic Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
021L49P	Bypass Left Ventricle to Pulmonary Trunk with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L49Q	Bypass Left Ventricle to Right Pulmonary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L49R	Bypass Left Ventricle to Left Pulmonary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4AP	Bypass Left Ventricle to Pulmonary Trunk with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4AQ	Bypass Left Ventricle to Right Pulmonary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4AR	Bypass Left Ventricle to Left Pulmonary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4JP	Bypass Left Ventricle to Pulmonary Trunk with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4JQ	Bypass Left Ventricle to Right Pulmonary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4JR	Bypass Left Ventricle to Left Pulmonary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4KP	Bypass Left Ventricle to Pulmonary Trunk with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4KQ	Bypass Left Ventricle to Right Pulmonary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4KR	Bypass Left Ventricle to Left Pulmonary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4Z8	Bypass Left Ventricle to Right Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4Z9	Bypass Left Ventricle to Left Internal Mammary, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4ZC	Bypass Left Ventricle to Thoracic Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4ZF	Bypass Left Ventricle to Abdominal Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4ZP	Bypass Left Ventricle to Pulmonary Trunk, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4ZQ	Bypass Left Ventricle to Right Pulmonary Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
021L4ZR	Bypass Left Ventricle to Left Pulmonary Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0270046	Dilation of Coronary Artery, One Artery, Bifurcation, with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
027004Z	Dilation of Coronary Artery, One Artery with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0270056	Dilation of Coronary Artery, One Artery, Bifurcation, with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027005Z	Dilation of Coronary Artery, One Artery with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
0270066	Dilation of Coronary Artery, One Artery, Bifurcation, with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027006Z	Dilation of Coronary Artery, One Artery with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
0270076	Dilation of Coronary Artery, One Artery, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027007Z	Dilation of Coronary Artery, One Artery with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02700D6	Dilation of Coronary Artery, One Artery, Bifurcation, with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02700DZ	Dilation of Coronary Artery, One Artery with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02700E6	Dilation of Coronary Artery, One Artery, Bifurcation, with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02700EZ	Dilation of Coronary Artery, One Artery with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02700F6	Dilation of Coronary Artery, One Artery, Bifurcation, with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02700FZ	Dilation of Coronary Artery, One Artery with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02700G6	Dilation of Coronary Artery, One Artery, Bifurcation, with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02700GZ	Dilation of Coronary Artery, One Artery with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02700T6	Dilation of Coronary Artery, One Artery, Bifurcation, with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02700TZ	Dilation of Coronary Artery, One Artery with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02700Z6	Dilation of Coronary Artery, One Artery, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02700ZZ	Dilation of Coronary Artery, One Artery, Open Approach	Procedure	ICD-10-PCS
0270346	Dilation of Coronary Artery, One Artery, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
027034Z	Dilation of Coronary Artery, One Artery with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0270356	Dilation of Coronary Artery, One Artery, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027035Z	Dilation of Coronary Artery, One Artery with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
0270366	Dilation of Coronary Artery, One Artery, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027036Z	Dilation of Coronary Artery, One Artery with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
0270376	Dilation of Coronary Artery, One Artery, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027037Z	Dilation of Coronary Artery, One Artery with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02703D6	Dilation of Coronary Artery, One Artery, Bifurcation, with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02703DZ	Dilation of Coronary Artery, One Artery with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02703E6	Dilation of Coronary Artery, One Artery, Bifurcation, with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02703EZ	Dilation of Coronary Artery, One Artery with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02703F6	Dilation of Coronary Artery, One Artery, Bifurcation, with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02703FZ	Dilation of Coronary Artery, One Artery with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02703G6	Dilation of Coronary Artery, One Artery, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02703GZ	Dilation of Coronary Artery, One Artery with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02703T6	Dilation of Coronary Artery, One Artery, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02703TZ	Dilation of Coronary Artery, One Artery with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0270446	Dilation of Coronary Artery, One Artery, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027044Z	Dilation of Coronary Artery, One Artery with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0270456	Dilation of Coronary Artery, One Artery, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027045Z	Dilation of Coronary Artery, One Artery with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0270466	Dilation of Coronary Artery, One Artery, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027046Z	Dilation of Coronary Artery, One Artery with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0270476	Dilation of Coronary Artery, One Artery, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027047Z	Dilation of Coronary Artery, One Artery with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704D6	Dilation of Coronary Artery, One Artery, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704DZ	Dilation of Coronary Artery, One Artery with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704E6	Dilation of Coronary Artery, One Artery, Bifurcation, with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704EZ	Dilation of Coronary Artery, One Artery with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704F6	Dilation of Coronary Artery, One Artery, Bifurcation, with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704FZ	Dilation of Coronary Artery, One Artery with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704G6	Dilation of Coronary Artery, One Artery, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704GZ	Dilation of Coronary Artery, One Artery with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02704T6	Dilation of Coronary Artery, One Artery, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02704TZ	Dilation of Coronary Artery, One Artery with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0271046	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
027104Z	Dilation of Coronary Artery, Two Arteries with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
0271056	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027105Z	Dilation of Coronary Artery, Two Arteries with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
0271066	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027106Z	Dilation of Coronary Artery, Two Arteries with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
0271076	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027107Z	Dilation of Coronary Artery, Two Arteries with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02710D6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02710DZ	Dilation of Coronary Artery, Two Arteries with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02710E6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02710EZ	Dilation of Coronary Artery, Two Arteries with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02710F6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02710FZ	Dilation of Coronary Artery, Two Arteries with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02710G6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02710GZ	Dilation of Coronary Artery, Two Arteries with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02710T6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02710TZ	Dilation of Coronary Artery, Two Arteries with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02710Z6	Dilation of Coronary Artery, Two Arteries, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02710ZZ	Dilation of Coronary Artery, Two Arteries, Open Approach	Procedure	ICD-10-PCS
0271346	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
027134Z	Dilation of Coronary Artery, Two Arteries with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0271356	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027135Z	Dilation of Coronary Artery, Two Arteries with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
0271366	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027136Z	Dilation of Coronary Artery, Two Arteries with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0271376	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027137Z	Dilation of Coronary Artery, Two Arteries with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02713D6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02713DZ	Dilation of Coronary Artery, Two Arteries with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02713E6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02713EZ	Dilation of Coronary Artery, Two Arteries with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02713F6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02713FZ	Dilation of Coronary Artery, Two Arteries with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02713G6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02713GZ	Dilation of Coronary Artery, Two Arteries with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02713T6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02713TZ	Dilation of Coronary Artery, Two Arteries with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0271446	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027144Z	Dilation of Coronary Artery, Two Arteries with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0271456	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027145Z	Dilation of Coronary Artery, Two Arteries with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0271466	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027146Z	Dilation of Coronary Artery, Two Arteries with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0271476	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027147Z	Dilation of Coronary Artery, Two Arteries with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714D6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714DZ	Dilation of Coronary Artery, Two Arteries with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714E6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714EZ	Dilation of Coronary Artery, Two Arteries with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
02714F6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714FZ	Dilation of Coronary Artery, Two Arteries with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714G6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714GZ	Dilation of Coronary Artery, Two Arteries with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714T6	Dilation of Coronary Artery, Two Arteries, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02714TZ	Dilation of Coronary Artery, Two Arteries with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0272046	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
027204Z	Dilation of Coronary Artery, Three Arteries with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
0272056	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027205Z	Dilation of Coronary Artery, Three Arteries with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
0272066	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027206Z	Dilation of Coronary Artery, Three Arteries with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0272076	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027207Z	Dilation of Coronary Artery, Three Arteries with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02720D6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02720DZ	Dilation of Coronary Artery, Three Arteries with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02720E6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02720EZ	Dilation of Coronary Artery, Three Arteries with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02720F6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02720FZ	Dilation of Coronary Artery, Three Arteries with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02720G6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02720GZ	Dilation of Coronary Artery, Three Arteries with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02720T6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02720TZ	Dilation of Coronary Artery, Three Arteries with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02720Z6	Dilation of Coronary Artery, Three Arteries, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02720ZZ	Dilation of Coronary Artery, Three Arteries, Open Approach	Procedure	ICD-10-PCS
0272346	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
027234Z	Dilation of Coronary Artery, Three Arteries with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0272356	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
027235Z	Dilation of Coronary Artery, Three Arteries with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
0272366	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027236Z	Dilation of Coronary Artery, Three Arteries with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
0272376	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027237Z	Dilation of Coronary Artery, Three Arteries with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02723D6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02723DZ	Dilation of Coronary Artery, Three Arteries with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02723E6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02723EZ	Dilation of Coronary Artery, Three Arteries with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02723F6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02723FZ	Dilation of Coronary Artery, Three Arteries with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02723G6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02723GZ	Dilation of Coronary Artery, Three Arteries with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02723T6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02723TZ	Dilation of Coronary Artery, Three Arteries with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0272446	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
027244Z	Dilation of Coronary Artery, Three Arteries with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0272456	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027245Z	Dilation of Coronary Artery, Three Arteries with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0272466	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027246Z	Dilation of Coronary Artery, Three Arteries with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0272476	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027247Z	Dilation of Coronary Artery, Three Arteries with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724D6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724DZ	Dilation of Coronary Artery, Three Arteries with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724E6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724EZ	Dilation of Coronary Artery, Three Arteries with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724F6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02724FZ	Dilation of Coronary Artery, Three Arteries with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724G6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724GZ	Dilation of Coronary Artery, Three Arteries with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724T6	Dilation of Coronary Artery, Three Arteries, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02724TZ	Dilation of Coronary Artery, Three Arteries with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0273046	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
027304Z	Dilation of Coronary Artery, Four or More Arteries with Drug-eluting Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
0273056	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027305Z	Dilation of Coronary Artery, Four or More Arteries with Two Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
0273066	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
027306Z	Dilation of Coronary Artery, Four or More Arteries with Three Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
0273076	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
027307Z	Dilation of Coronary Artery, Four or More Arteries with Four or More Drug-eluting Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02730D6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02730DZ	Dilation of Coronary Artery, Four or More Arteries with Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02730E6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02730EZ	Dilation of Coronary Artery, Four or More Arteries with Two Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02730F6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02730FZ	Dilation of Coronary Artery, Four or More Arteries with Three Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02730G6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02730GZ	Dilation of Coronary Artery, Four or More Arteries with Four or More Intraluminal Devices, Open Approach	Procedure	ICD-10-PCS
02730T6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02730TZ	Dilation of Coronary Artery, Four or More Arteries with Radioactive Intraluminal Device, Open Approach	Procedure	ICD-10-PCS
02730Z6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02730ZZ	Dilation of Coronary Artery, Four or More Arteries, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0273346	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
027334Z	Dilation of Coronary Artery, Four or More Arteries with Drug-eluting Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0273356	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027335Z	Dilation of Coronary Artery, Four or More Arteries with Two Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
0273366	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027336Z	Dilation of Coronary Artery, Four or More Arteries with Three Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
0273376	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
027337Z	Dilation of Coronary Artery, Four or More Arteries with Four or More Drug-eluting Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02733D6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02733DZ	Dilation of Coronary Artery, Four or More Arteries with Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02733E6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02733EZ	Dilation of Coronary Artery, Four or More Arteries with Two Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02733F6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02733FZ	Dilation of Coronary Artery, Four or More Arteries with Three Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02733G6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02733GZ	Dilation of Coronary Artery, Four or More Arteries with Four or More Intraluminal Devices, Percutaneous Approach	Procedure	ICD-10-PCS
02733T6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
02733TZ	Dilation of Coronary Artery, Four or More Arteries with Radioactive Intraluminal Device, Percutaneous Approach	Procedure	ICD-10-PCS
0273446	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027344Z	Dilation of Coronary Artery, Four or More Arteries with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0273456	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027345Z	Dilation of Coronary Artery, Four or More Arteries with Two Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0273466	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027346Z	Dilation of Coronary Artery, Four or More Arteries with Three Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0273476	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
027347Z	Dilation of Coronary Artery, Four or More Arteries with Four or More Drug-eluting Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734D6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734DZ	Dilation of Coronary Artery, Four or More Arteries with Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734E6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734EZ	Dilation of Coronary Artery, Four or More Arteries with Two Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734F6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734FZ	Dilation of Coronary Artery, Four or More Arteries with Three Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734G6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734GZ	Dilation of Coronary Artery, Four or More Arteries with Four or More Intraluminal Devices, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734T6	Dilation of Coronary Artery, Four or More Arteries, Bifurcation, with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02734TZ	Dilation of Coronary Artery, Four or More Arteries with Radioactive Intraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02C00Z6	Extirpation of Matter from Coronary Artery, One Artery, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02C00ZZ	Extirpation of Matter from Coronary Artery, One Artery, Open Approach	Procedure	ICD-10-PCS
02C03Z6	Extirpation of Matter from Coronary Artery, One Artery, Bifurcation, Percutaneous Approach	Procedure	ICD-10-PCS
02C03ZZ	Extirpation of Matter from Coronary Artery, One Artery, Percutaneous Approach	Procedure	ICD-10-PCS
02C04Z6	Extirpation of Matter from Coronary Artery, One Artery, Bifurcation, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02C04ZZ	Extirpation of Matter from Coronary Artery, One Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02C10Z6	Extirpation of Matter from Coronary Artery, Two Arteries, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02C10ZZ	Extirpation of Matter from Coronary Artery, Two Arteries, Open Approach	Procedure	ICD-10-PCS
02C13Z6	Extirpation of Matter from Coronary Artery, Two Arteries, Bifurcation, Percutaneous Approach	Procedure	ICD-10-PCS
02C13ZZ	Extirpation of Matter from Coronary Artery, Two Arteries, Percutaneous Approach	Procedure	ICD-10-PCS
02C14Z6	Extirpation of Matter from Coronary Artery, Two Arteries, Bifurcation, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02C14ZZ	Extirpation of Matter from Coronary Artery, Two Arteries, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02C20Z6	Extirpation of Matter from Coronary Artery, Three Arteries, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02C20ZZ	Extirpation of Matter from Coronary Artery, Three Arteries, Open Approach	Procedure	ICD-10-PCS
02C23Z6	Extirpation of Matter from Coronary Artery, Three Arteries, Bifurcation, Percutaneous Approach	Procedure	ICD-10-PCS
02C23ZZ	Extirpation of Matter from Coronary Artery, Three Arteries, Percutaneous Approach	Procedure	ICD-10-PCS
02C24Z6	Extirpation of Matter from Coronary Artery, Three Arteries, Bifurcation, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02C24ZZ	Extirpation of Matter from Coronary Artery, Three Arteries, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02C30Z6	Extirpation of Matter from Coronary Artery, Four or More Arteries, Bifurcation, Open Approach	Procedure	ICD-10-PCS
02C30ZZ	Extirpation of Matter from Coronary Artery, Four or More Arteries, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
02C33Z6	Extirpation of Matter from Coronary Artery, Four or More Arteries, Bifurcation, Percutaneous Approach	Procedure	ICD-10-PCS
02C33ZZ	Extirpation of Matter from Coronary Artery, Four or More Arteries, Percutaneous Approach	Procedure	ICD-10-PCS
02C34Z6	Extirpation of Matter from Coronary Artery, Four or More Arteries, Bifurcation, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
02C34ZZ	Extirpation of Matter from Coronary Artery, Four or More Arteries, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
33510	Coronary artery bypass, vein only; single coronary venous graft	Procedure	CPT-4
33511	Coronary artery bypass, vein only; 2 coronary venous grafts	Procedure	CPT-4
33512	Coronary artery bypass, vein only; 3 coronary venous grafts	Procedure	CPT-4
33513	Coronary artery bypass, vein only; 4 coronary venous grafts	Procedure	CPT-4
33514	Coronary artery bypass, vein only; 5 coronary venous grafts	Procedure	CPT-4
33516	Coronary artery bypass, vein only; 6 or more coronary venous grafts	Procedure	CPT-4
33517	Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure)	Procedure	CPT-4
33518	Coronary artery bypass, using venous graft(s) and arterial graft(s); 2 venous grafts (List separately in addition to code for primary procedure)	Procedure	CPT-4
33519	Coronary artery bypass, using venous graft(s) and arterial graft(s); 3 venous grafts (List separately in addition to code for primary procedure)	Procedure	CPT-4
33520	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Single Graft	Procedure	CPT-4
33521	Coronary artery bypass, using venous graft(s) and arterial graft(s); 4 venous grafts (List separately in addition to code for primary procedure)	Procedure	CPT-4
33522	Coronary artery bypass, using venous graft(s) and arterial graft(s); 5 venous grafts (List separately in addition to code for primary procedure)	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
33523	Coronary artery bypass, using venous graft(s) and arterial graft(s); 6 or more venous grafts (List separately in addition to code for primary procedure)	Procedure	CPT-4
33525	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Two Coronary Grafts	Procedure	CPT-4
33528	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Three Or More Coronary Grafts	Procedure	CPT-4
33530	Reoperation, coronary artery bypass procedure or valve procedure, more than 1 month after original operation (List separately in addition to code for primary procedure)	Procedure	CPT-4
33533	Coronary artery bypass, using arterial graft(s); single arterial graft	Procedure	CPT-4
33534	Coronary artery bypass, using arterial graft(s); 2 coronary arterial grafts	Procedure	CPT-4
33535	Coronary artery bypass, using arterial graft(s); 3 coronary arterial grafts	Procedure	CPT-4
33536	Coronary artery bypass, using arterial graft(s); 4 or more coronary arterial grafts	Procedure	CPT-4
33560	Myocardial Operation Combined With Coronary Bypass Procedure	Procedure	CPT-4
33570	CORONARY ANGIOPLASTY W/BYPASS	Procedure	CPT-4
33572	Coronary endarterectomy, open, any method, of left anterior descending, circumflex, or right coronary artery performed in conjunction with coronary artery bypass graft procedure, each vessel (List separately in addition to primary procedure)	Procedure	CPT-4
33575	CORON ANGIOPLSTY W/BYPASS; COMBO W/VASCULARIZAT	Procedure	CPT-4
34701	Endovascular repair of infrarenal aorta by deployment of an aorto-aortic tube endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the aortic bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the aortic bifurcation; for other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer)	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
34702	Endovascular repair of infrarenal aorta by deployment of an aorto-aortic tube endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the aortic bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the aortic bifurcation; for rupture including temporary aortic and/or iliac balloon occlusion, when performed (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulc	Procedure	CPT-4
34703	Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-uni-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer)	Procedure	CPT-4
34704	Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-uni-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for rupture including temporary aortic and/or iliac balloon occlusion, when performed (eg, for aneurysm, pseudoaneurysm, dissec	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
34705	Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-bi-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, penetrating ulcer)	Procedure	CPT-4
34706	Endovascular repair of infrarenal aorta and/or iliac artery(ies) by deployment of an aorto-bi-iliac endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, all endograft extension(s) placed in the aorta from the level of the renal arteries to the iliac bifurcation, and all angioplasty/stenting performed from the level of the renal arteries to the iliac bifurcation; for rupture including temporary aortic and/or iliac balloon occlusion, when performed (eg, for aneurysm, pseudoaneurysm, dissect	Procedure	CPT-4
34707	Endovascular repair of iliac artery by deployment of an ilio-iliac tube endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, and all endograft extension(s) proximally to the aortic bifurcation and distally to the iliac bifurcation, and treatment zone angioplasty/stenting, when performed, unilateral; for other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, arteriovenous malformation)	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
34708	Endovascular repair of iliac artery by deployment of an ilio-iliac tube endograft including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, and all endograft extension(s) proximally to the aortic bifurcation and distally to the iliac bifurcation, and treatment zone angioplasty/stenting, when performed, unilateral; for rupture including temporary aortic and/or iliac balloon occlusion, when performed (eg, for aneurysm, pseudoaneurysm, dissection, arteriovenous malformation, traumatic disruption)	Procedure	CPT-4
34709	Placement of extension prosthesis(es) distal to the common iliac artery(ies) or proximal to the renal artery(ies) for endovascular repair of infrarenal abdominal aortic or iliac aneurysm, false aneurysm, dissection, penetrating ulcer, including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, and treatment zone angioplasty/stenting, when performed, per vessel treated (List separately in addition to code for primary procedure)	Procedure	CPT-4
34710	Delayed placement of distal or proximal extension prosthesis for endovascular repair of infrarenal abdominal aortic or iliac aneurysm, false aneurysm, dissection, endoleak, or endograft migration, including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, and treatment zone angioplasty/stenting, when performed; initial vessel treated	Procedure	CPT-4
34711	Delayed placement of distal or proximal extension prosthesis for endovascular repair of infrarenal abdominal aortic or iliac aneurysm, false aneurysm, dissection, endoleak, or endograft migration, including pre-procedure sizing and device selection, all nonselective catheterization(s), all associated radiological supervision and interpretation, and treatment zone angioplasty/stenting, when performed; each additional vessel treated (List separately in addition to code for primary procedure)	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
34717	Endovascular repair of iliac artery at the time of aorto-iliac artery endograft placement by deployment of an iliac branched endograft including pre-procedure sizing and device selection, all ipsilateral selective iliac artery catheterization(s), all associated radiological supervision and interpretation, and all endograft extension(s) proximally to the aortic bifurcation and distally in the internal iliac, external iliac, and common femoral artery(ies), and treatment zone angioplasty/stenting, when performed, for rupture or other than rupture (eg, for aneurysm, pseudoaneurysm, dissection, art	Procedure	CPT-4
34718	Endovascular repair of iliac artery, not associated with placement of an aorto-iliac artery endograft at the same session, by deployment of an iliac branched endograft, including pre-procedure sizing and device selection, all ipsilateral selective iliac artery catheterization(s), all associated radiological supervision and interpretation, and all endograft extension(s) proximally to the aortic bifurcation and distally in the internal iliac, external iliac, and common femoral artery(ies), and treatment zone angioplasty/stenting, when performed, for other than rupture (eg, for aneurysm, pseudoan	Procedure	CPT-4
34841	Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including one visceral artery endoprosthesis (superior mesenteric, celiac or renal artery)	Procedure	CPT-4
34842	Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including two visceral artery endoprostheses (superior mesenteric, celiac and/or renal artery[s])	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
34843	Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including three visceral artery endoprosthesis (superior mesenteric, celiac and/or renal artery[s])	Procedure	CPT-4
34844	Endovascular repair of visceral aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) by deployment of a fenestrated visceral aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including four or more visceral artery endoprosthesis (superior mesenteric, celiac and/or renal artery[s])	Procedure	CPT-4
34845	Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including one visceral artery endoprosthesis (superior mesenteric, celiac or renal artery)	Procedure	CPT-4
34846	Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including two visceral artery endoprosthesis (superior mesenteric, celiac and/or renal artery[s])	Procedure	CPT-4



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
34847	Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including three visceral artery endoprotheses (superior mesenteric, celiac and/or renal artery[s])	Procedure	CPT-4
34848	Endovascular repair of visceral aorta and infrarenal abdominal aorta (eg, aneurysm, pseudoaneurysm, dissection, penetrating ulcer, intramural hematoma, or traumatic disruption) with a fenestrated visceral aortic endograft and concomitant unibody or modular infrarenal aortic endograft and all associated radiological supervision and interpretation, including target zone angioplasty, when performed; including four or more visceral artery endoprotheses (superior mesenteric, celiac and/or renal artery[s])	Procedure	CPT-4
35450	Transluminal balloon angioplasty, open; renal or other visceral artery	Procedure	CPT-4
35452	Transluminal balloon angioplasty, open; aortic	Procedure	CPT-4
35454	Transluminal balloon angioplasty, open; iliac	Procedure	CPT-4
35456	Transluminal balloon angioplasty, open; femoral-popliteal	Procedure	CPT-4
35458	Transluminal balloon angioplasty, open; brachiocephalic trunk or branches, each vessel	Procedure	CPT-4
35459	Transluminal balloon angioplasty, open; tibioperoneal trunk and branches	Procedure	CPT-4
35460	Transluminal balloon angioplasty, open; venous	Procedure	CPT-4
35470	Transluminal balloon angioplasty, percutaneous; tibioperoneal trunk or branches, each vessel	Procedure	CPT-4
35471	Transluminal balloon angioplasty, percutaneous; renal or visceral artery	Procedure	CPT-4
35472	Transluminal balloon angioplasty, percutaneous; aortic	Procedure	CPT-4
35473	Transluminal balloon angioplasty, percutaneous; iliac	Procedure	CPT-4
35474	Transluminal balloon angioplasty, percutaneous; femoral-popliteal	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
35475	Transluminal balloon angioplasty, percutaneous; brachiocephalic trunk or branches, each vessel	Procedure	CPT-4
35476	Transluminal balloon angioplasty, percutaneous; venous	Procedure	CPT-4
35600	Harvest of upper extremity artery, 1 segment, for coronary artery bypass procedure (List separately in addition to code for primary procedure)	Procedure	CPT-4
35879	Revision, lower extremity arterial bypass, without thrombectomy, open; with vein patch angioplasty	Procedure	CPT-4
36902	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report; with transluminal balloon angioplasty, peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessar	Procedure	CPT-4
36903	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report; with transcatheter placement of intravascular stent(s), peripheral dialysis segment, including all imaging and radiological supervision and interp	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
36905	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s); with transluminal balloon angioplasty, peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty	Procedure	CPT-4
36906	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s); with transcatheter placement of intravascular stent(s), peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary to perform the stenting, and all angioplasty within the peripheral dialysis circuit	Procedure	CPT-4
36907	Transluminal balloon angioplasty, central dialysis segment, performed through dialysis circuit, including all imaging and radiological supervision and interpretation required to perform the angioplasty (List separately in addition to code for primary procedure)	Procedure	CPT-4
36908	Transcatheter placement of intravascular stent(s), central dialysis segment, performed through dialysis circuit, including all imaging and radiological supervision and interpretation required to perform the stenting, and all angioplasty in the central dialysis segment (List separately in addition to code for primary procedure)	Procedure	CPT-4
37215	Transcatheter placement of intravascular stent(s), cervical carotid artery, open or percutaneous, including angioplasty, when performed, and radiological supervision and interpretation; with distal embolic protection	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
37216	Transcatheter placement of intravascular stent(s), cervical carotid artery, open or percutaneous, including angioplasty, when performed, and radiological supervision and interpretation; without distal embolic protection	Procedure	CPT-4
37217	Transcatheter placement of intravascular stent(s), intrathoracic common carotid artery or innominate artery by retrograde treatment, open ipsilateral cervical carotid artery exposure, including angioplasty, when performed, and radiological supervision and interpretation	Procedure	CPT-4
37218	Transcatheter placement of intravascular stent(s), intrathoracic common carotid artery or innominate artery, open or percutaneous antegrade approach, including angioplasty, when performed, and radiological supervision and interpretation	Procedure	CPT-4
37220	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal angioplasty	Procedure	CPT-4
37221	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	Procedure	CPT-4
37222	Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)	Procedure	CPT-4
37223	Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	Procedure	CPT-4
37224	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal angioplasty	Procedure	CPT-4
37225	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with atherectomy, includes angioplasty within the same vessel, when performed	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
37226	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	Procedure	CPT-4
37227	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed	Procedure	CPT-4
37228	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal angioplasty	Procedure	CPT-4
37229	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with atherectomy, includes angioplasty within the same vessel, when performed	Procedure	CPT-4
37230	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	Procedure	CPT-4
37231	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed	Procedure	CPT-4
37232	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)	Procedure	CPT-4
37233	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	Procedure	CPT-4

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Code	Description	Code Category	Code Type
37234	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	Procedure	CPT-4
37235	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	Procedure	CPT-4
37236	Transcatheter placement of an intravascular stent(s) (except lower extremity artery(s) for occlusive disease, cervical carotid, extracranial vertebral or intrathoracic carotid, intracranial, or coronary), open or percutaneous, including radiological supervision and interpretation and including all angioplasty within the same vessel, when performed; initial artery	Procedure	CPT-4
37237	Transcatheter placement of an intravascular stent(s) (except lower extremity artery(s) for occlusive disease, cervical carotid, extracranial vertebral or intrathoracic carotid, intracranial, or coronary), open or percutaneous, including radiological supervision and interpretation and including all angioplasty within the same vessel, when performed; each additional artery (List separately in addition to code for primary procedure)	Procedure	CPT-4
37238	Transcatheter placement of an intravascular stent(s), open or percutaneous, including radiological supervision and interpretation and including angioplasty within the same vessel, when performed; initial vein	Procedure	CPT-4
37239	Transcatheter placement of an intravascular stent(s), open or percutaneous, including radiological supervision and interpretation and including angioplasty within the same vessel, when performed; each additional vein (List separately in addition to code for primary procedure)	Procedure	CPT-4

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Code	Description	Code Category	Code Type
37246	Transluminal balloon angioplasty (except lower extremity artery(ies) for occlusive disease, intracranial, coronary, pulmonary, or dialysis circuit), open or percutaneous, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty within the same artery; initial artery	Procedure	CPT-4
37247	Transluminal balloon angioplasty (except lower extremity artery(ies) for occlusive disease, intracranial, coronary, pulmonary, or dialysis circuit), open or percutaneous, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty within the same artery; each additional artery (List separately in addition to code for primary procedure)	Procedure	CPT-4
37248	Transluminal balloon angioplasty (except dialysis circuit), open or percutaneous, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty within the same vein; initial vein	Procedure	CPT-4
37249	Transluminal balloon angioplasty (except dialysis circuit), open or percutaneous, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty within the same vein; each additional vein (List separately in addition to code for primary procedure)	Procedure	CPT-4
3E07017	Introduction of Other Thrombolytic into Coronary Artery, Open Approach	Procedure	ICD-10-PCS
3E070PZ	Introduction of Platelet Inhibitor into Coronary Artery, Open Approach	Procedure	ICD-10-PCS
3E07317	Introduction of Other Thrombolytic into Coronary Artery, Percutaneous Approach	Procedure	ICD-10-PCS
3E073PZ	Introduction of Platelet Inhibitor into Coronary Artery, Percutaneous Approach	Procedure	ICD-10-PCS
4A020N7	Measurement of Cardiac Sampling and Pressure, Left Heart, Open Approach	Procedure	ICD-10-PCS
4A020N8	Measurement of Cardiac Sampling and Pressure, Bilateral, Open Approach	Procedure	ICD-10-PCS
4A023N7	Measurement of Cardiac Sampling and Pressure, Left Heart, Percutaneous Approach	Procedure	ICD-10-PCS
4A023N8	Measurement of Cardiac Sampling and Pressure, Bilateral, Percutaneous Approach	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
4A12XSH	Monitoring of Cardiac Vascular Perfusion using Indocyanine Green Dye, External Approach	Procedure	ICD-10-PCS
61630	Balloon angioplasty, intracranial (eg, atherosclerotic stenosis), percutaneous	Procedure	CPT-4
61635	Transcatheter placement of intravascular stent(s), intracranial (eg, atherosclerotic stenosis), including balloon angioplasty, if performed	Procedure	CPT-4
75962	Transluminal balloon angioplasty, peripheral artery other than renal, or other visceral artery, iliac or lower extremity, radiological supervision and interpretation	Procedure	CPT-4
75963	Percutaneous Transluminal Angioplasty, Any Method, Peripheral Artery; Complete Procedure	Procedure	CPT-4
75964	Transluminal balloon angioplasty, each additional peripheral artery other than renal or other visceral artery, iliac or lower extremity, radiological supervision and interpretation (List separately in addition to code for primary procedure)	Procedure	CPT-4
75965	Percutaneous Transluminal Angioplasty, Any Method, Each Additional Peripheral Artery; Complete Procedure	Procedure	CPT-4
75966	Transluminal balloon angioplasty, renal or other visceral artery, radiological supervision and interpretation	Procedure	CPT-4
75967	Percutaneous Transluminal Angioplasty, Any Method, Renal Or Other Visceral Artery; Complete Procedure	Procedure	CPT-4
75968	Transluminal balloon angioplasty, each additional visceral artery, radiological supervision and interpretation (List separately in addition to code for primary procedure)	Procedure	CPT-4
75969	Percutaneous Transluminal Angioplasty, Any Method, Each Additional Visceral Artery; Complete Procedure	Procedure	CPT-4
75970	Transcatheter biopsy, radiological supervision and interpretation	Procedure	CPT-4
75972	Percutaneous Transluminal Angioplasty, Unilateral;	Procedure	CPT-4
75973	Percutaneous Transluminal Angioplasty, Unilateral;	Procedure	CPT-4
75974	Percutaneous Transluminal Angioplasty, Bilateral, Single Catheter;	Procedure	CPT-4



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
75975	Percutaneous Transluminal Angioplasty, Bilateral, Single Catheter;	Procedure	CPT-4
75976	Percutaneous Transluminal Angioplasty, Bilateral, Dual Catheters;	Procedure	CPT-4
75977	Percutaneous Transluminal Angioplasty, Bilateral, Dual Catheters;	Procedure	CPT-4
75978	Transluminal balloon angioplasty, venous (eg, subclavian stenosis), radiological supervision and interpretation	Procedure	CPT-4
75979	Percutaneous Transluminal Angioplasty, Venous (eg, Subclavian Stenosis); Complete Procedure	Procedure	CPT-4
92920	Percutaneous transluminal coronary angioplasty; single major coronary artery or branch	Procedure	CPT-4
92921	Percutaneous transluminal coronary angioplasty; each additional branch of a major coronary artery (List separately in addition to code for primary procedure)	Procedure	CPT-4
92924	Percutaneous transluminal coronary atherectomy, with coronary angioplasty when performed; single major coronary artery or branch	Procedure	CPT-4
92925	Percutaneous transluminal coronary atherectomy, with coronary angioplasty when performed; each additional branch of a major coronary artery (List separately in addition to code for primary procedure)	Procedure	CPT-4
92928	Percutaneous transcatheter placement of intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch	Procedure	CPT-4
92929	Percutaneous transcatheter placement of intracoronary stent(s), with coronary angioplasty when performed; each additional branch of a major coronary artery (List separately in addition to code for primary procedure)	Procedure	CPT-4
92933	Percutaneous transluminal coronary atherectomy, with intracoronary stent, with coronary angioplasty when performed; single major coronary artery or branch	Procedure	CPT-4
92934	Percutaneous transluminal coronary atherectomy, with intracoronary stent, with coronary angioplasty when performed; each additional branch of a major coronary artery (List separately in addition to code for primary procedure)	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
92937	Percutaneous transluminal revascularization of or through coronary artery bypass graft (internal mammary, free arterial, venous), any combination of intracoronary stent, atherectomy and angioplasty, including distal protection when performed; single vessel	Procedure	CPT-4
92938	Percutaneous transluminal revascularization of or through coronary artery bypass graft (internal mammary, free arterial, venous), any combination of intracoronary stent, atherectomy and angioplasty, including distal protection when performed; each additional branch subtended by the bypass graft (List separately in addition to code for primary procedure)	Procedure	CPT-4
92941	Percutaneous transluminal revascularization of acute total/subtotal occlusion during acute myocardial infarction, coronary artery or coronary artery bypass graft, any combination of intracoronary stent, atherectomy and angioplasty, including aspiration thrombectomy when performed, single vessel	Procedure	CPT-4
92943	Percutaneous transluminal revascularization of chronic total occlusion, coronary artery, coronary artery branch, or coronary artery bypass graft, any combination of intracoronary stent, atherectomy and angioplasty; single vessel	Procedure	CPT-4
92944	Percutaneous transluminal revascularization of chronic total occlusion, coronary artery, coronary artery branch, or coronary artery bypass graft, any combination of intracoronary stent, atherectomy and angioplasty; each additional coronary artery, coronary artery branch, or bypass graft (List separately in addition to code for primary procedure)	Procedure	CPT-4
92973	Percutaneous transluminal coronary thrombectomy mechanical (List separately in addition to code for primary procedure)	Procedure	CPT-4
92974	Transcatheter placement of radiation delivery device for subsequent coronary intravascular brachytherapy (List separately in addition to code for primary procedure)	Procedure	CPT-4
92977	Thrombolysis, coronary; by intravenous infusion	Procedure	CPT-4

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Code	Description	Code Category	Code Type
92980	Transcatheter placement of an intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel	Procedure	CPT-4
92981	Transcatheter placement of an intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; each additional vessel (List separately in addition to code for primary procedure)	Procedure	CPT-4
92982	Percutaneous transluminal coronary balloon angioplasty; single vessel	Procedure	CPT-4
92984	Percutaneous transluminal coronary balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)	Procedure	CPT-4
92995	Percutaneous transluminal coronary atherectomy, by mechanical or other method, with or without balloon angioplasty; single vessel	Procedure	CPT-4
92996	Percutaneous transluminal coronary atherectomy, by mechanical or other method, with or without balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)	Procedure	CPT-4
92997	Percutaneous transluminal pulmonary artery balloon angioplasty; single vessel	Procedure	CPT-4
92998	Percutaneous transluminal pulmonary artery balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)	Procedure	CPT-4
93452	Left heart catheterization including intraprocedural injection(s) for left ventriculography, imaging supervision and interpretation, when performed	Procedure	CPT-4
93453	Combined right and left heart catheterization including intraprocedural injection(s) for left ventriculography, imaging supervision and interpretation, when performed	Procedure	CPT-4
93454	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation;	Procedure	CPT-4

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Code	Description	Code Category	Code Type
93455	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with catheter placement(s) in bypass graft(s) (internal mammary, free arterial, venous grafts) including intraprocedural injection(s) for bypass graft angiography	Procedure	CPT-4
93456	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with right heart catheterization	Procedure	CPT-4
93457	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with catheter placement(s) in bypass graft(s) (internal mammary, free arterial, venous grafts) including intraprocedural injection(s) for bypass graft angiography and right heart catheterization	Procedure	CPT-4
93458	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with left heart catheterization including intraprocedural injection(s) for left ventriculography, when performed	Procedure	CPT-4
93459	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with left heart catheterization including intraprocedural injection(s) for left ventriculography, when performed, catheter placement(s) in bypass graft(s) (internal mammary, free arterial, venous grafts) with bypass graft angiography	Procedure	CPT-4
93460	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with right and left heart catheterization including intraprocedural injection(s) for left ventriculography, when performed	Procedure	CPT-4

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Code	Description	Code Category	Code Type
93461	Catheter placement in coronary artery(s) for coronary angiography, including intraprocedural injection(s) for coronary angiography, imaging supervision and interpretation; with right and left heart catheterization including intraprocedural injection(s) for left ventriculography, when performed, catheter placement(s) in bypass graft(s) (internal mammary, free arterial, venous grafts) with bypass graft angiography	Procedure	CPT-4
C1034	Catheter, coronary angioplasty, surpass superfusion catheter, long 30 surpass superfusion catheter	Procedure	HCPCS
C1100	Guide wire, percutaneous transluminal coronary angioplasty, medtronic ave gt1 guide wire, medtronic ave gt2 fusion guide wire, interventional technologies trackwire, interventional technologies trackwire support, interventional technologies trackwire extra support	Procedure	HCPCS
C1101	Catheter, percutaneous transluminal coronary angioplasty guide, medtronic ave 5f, 6f, 7f, 8f, 9f zuma guide catheter, medtronic ave z2 5f, 6f, 7f, 8f, 9f zuma guide catheter, medtronic ave vector guide catheter, medtronic ave vector x guide catheter. note: only the medtronic ave z2 zuma guide catheters are effective october 1, 2000. the medtronic ave zuma guide catheters were effective august 1, 2000.	Procedure	HCPCS
C1366	Guide wire, percutaneous transluminal coronary angioplasty, hi-torque iron man, hi-torque balance middleweight, hi-torque all star, hi-torque balance heavyweight, hi-torque balance trek	Procedure	HCPCS
C1367	Guide wire, percutaneous transluminal coronary angioplasty, hi-torque cross it, hi-torque cross-it 100xt, hi-torque cross-it 200xt, hi-torque cross-it 300xt, hi-torque wiggle	Procedure	HCPCS
C1500	Atherectomy system, peripheral, rotator rotational angioplasty system with rotalink exchangeable catheter, advancer, and guide wire	Procedure	HCPCS
C1725	Catheter, transluminal angioplasty, nonlaser (may include guidance, infusion/perfusion capability)	Procedure	HCPCS
C1885	Catheter, transluminal angioplasty, laser	Procedure	HCPCS

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Code	Description	Code Category	Code Type
C1930	Catheter, percutaneous transluminal coronary angioplasty, coyote dilatation catheter 20mm/30mm/40mm	Procedure	HCPCS
C1933	Catheter, opti-plast centurion 5.5f pta catheter (shaft length 50 cm to 120 cm), opti-plast xl 5.5f pta catheter (shaft length 75 cm to 120 cm), opti-plast pta catheter (5.5 fr), tru trac 5fr percutaneous transluminal angioplasty balloon dilatation catheter, optiplast xt 5 fr percutaneous transluminal angioplasty catheter (various sizes)	Procedure	HCPCS
C1948	Catheter, pursuit balloon angioplasty catheter, cook accent balloon angioplasty catheter	Procedure	HCPCS
C1981	Catheter ,coronary angioplasty balloon, adante, bonnie, bonnie 15mm, bonnie monorail 30mm or 40mm, bonnie sliding rail, bypass speedy, chubby, chubby sliding rail, coyote 20mm, coyote 9/15/25mm, maxxum, nc ranger, nc ranger 9mm, ranger 20mm, long ranger 30mm or 40mm, nc ranger 16/18mm, nc ranger 22/25/30mm, nc big ranger, quantum ranger, quantum ranger 1/4 sizes, quantum ranger 9/16/18mm, quantum ranger 22/30mm, quantum ranger 25mm, ranger lp 20/30/40, viva/long viva, ace - 1cm, ace - 2cm, ace graft, long ace, pivot cobra (10, 14, 18, 30, 40mm in lengths) note: only the bonnie monorail 30mm or	Procedure	HCPCS
C2605	Catheter, spectranetics extreme laser catheter, spectranetics extreme 0.9mm coronary angioplasty catheter (model 110-001)	Procedure	HCPCS
C2623	Catheter, transluminal angioplasty, drug-coated, nonlaser	Procedure	HCPCS
C3551	Guide wire, percutaneous transluminal coronary angioplasty, choice, luge, patriot, pt graphix intermediate, trooper, mailman 182/300 cm, glidewire gold guidewire, platinum plus guidewire, platinum plus guidewire with glidex hydrophilic coating, jagwire single-use high performance guide wire, merit medical systems extender guidewire, merit medical systems tomcat pta guidewire, platinum plus guidewire (0.014 and 0.018 in diameters)	Procedure	HCPCS
C8526	Optiplast xt 5f percutaneous transluminal angioplasty catheter (various sizes)	Procedure	HCPCS

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Code	Description	Code Category	Code Type
C9600	Percutaneous transcatheter placement of drug eluting intracoronary stent(s), with coronary angioplasty when performed; single major coronary artery or branch	Procedure	HCPCS
C9601	Percutaneous transcatheter placement of drug-eluting intracoronary stent(s), with coronary angioplasty when performed; each additional branch of a major coronary artery (list separately in addition to code for primary procedure)	Procedure	HCPCS
C9602	Percutaneous transluminal coronary atherectomy, with drug eluting intracoronary stent, with coronary angioplasty when performed; single major coronary artery or branch	Procedure	HCPCS
C9603	Percutaneous transluminal coronary atherectomy, with drug-eluting intracoronary stent, with coronary angioplasty when performed; each additional branch of a major coronary artery (list separately in addition to code for primary procedure)	Procedure	HCPCS
C9604	Percutaneous transluminal revascularization of or through coronary artery bypass graft (internal mammary, free arterial, venous), any combination of drug-eluting intracoronary stent, atherectomy and angioplasty, including distal protection when performed; single vessel	Procedure	HCPCS
C9605	Percutaneous transluminal revascularization of or through coronary artery bypass graft (internal mammary, free arterial, venous), any combination of drug-eluting intracoronary stent, atherectomy and angioplasty, including distal protection when performed; each additional branch subtended by the bypass graft (list separately in addition to code for primary procedure)	Procedure	HCPCS
C9606	Percutaneous transluminal revascularization of acute total/subtotal occlusion during acute myocardial infarction, coronary artery or coronary artery bypass graft, any combination of drug-eluting intracoronary stent, atherectomy and angioplasty, including aspiration thrombectomy when performed, single vessel	Procedure	HCPCS
C9607	Percutaneous transluminal revascularization of chronic total occlusion, coronary artery, coronary artery branch, or coronary artery bypass graft, any combination of drug-eluting intracoronary stent, atherectomy and angioplasty; single vessel	Procedure	HCPCS

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Code	Description	Code Category	Code Type
C9608	Percutaneous transluminal revascularization of chronic total occlusion, coronary artery, coronary artery branch, or coronary artery bypass graft, any combination of drug-eluting intracoronary stent, atherectomy and angioplasty; each additional coronary artery, coronary artery branch, or bypass graft (list separately in addition to code for primary procedure)	Procedure	HCPCS
C9754	Creation of arteriovenous fistula, percutaneous; direct, any site, including all imaging and radiologic supervision and interpretation, when performed and secondary procedures to redirect blood flow (e.g., transluminal balloon angioplasty, coil embolization, when performed)	Procedure	HCPCS
G0290	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel	Procedure	HCPCS
G0291	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; each additional vessel	Procedure	HCPCS
G0392	Transluminal balloon angioplasty, percutaneous; for maintenance of hemodialysis access, arteriovenous fistula or graft; arterial	Procedure	HCPCS
G0393	Transluminal balloon angioplasty, percutaneous; for maintenance of hemodialysis access, arteriovenous fistula or graft; venous	Procedure	HCPCS
I20	Angina pectoris	Diagnosis	ICD-10-CM
I20.0	Unstable angina	Diagnosis	ICD-10-CM
I20.1	Angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I20.8	Other forms of angina pectoris	Diagnosis	ICD-10-CM
I20.9	Angina pectoris, unspecified	Diagnosis	ICD-10-CM
I23.7	Postinfarction angina	Diagnosis	ICD-10-CM
I24	Other acute ischemic heart diseases	Diagnosis	ICD-10-CM
I24.0	Acute coronary thrombosis not resulting in myocardial infarction	Diagnosis	ICD-10-CM
I24.8	Other forms of acute ischemic heart disease	Diagnosis	ICD-10-CM



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Code	Description	Code Category	Code Type
I24.9	Acute ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
I25	Chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.1	Atherosclerotic heart disease of native coronary artery	Diagnosis	ICD-10-CM
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris	Diagnosis	ICD-10-CM
I25.11	Atherosclerotic heart disease of native coronary artery with angina pectoris	Diagnosis	ICD-10-CM
I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.2	Old myocardial infarction	Diagnosis	ICD-10-CM
I25.4	Coronary artery aneurysm and dissection	Diagnosis	ICD-10-CM
I25.41	Coronary artery aneurysm	Diagnosis	ICD-10-CM
I25.42	Coronary artery dissection	Diagnosis	ICD-10-CM
I25.5	Ischemic cardiomyopathy	Diagnosis	ICD-10-CM
I25.6	Silent myocardial ischemia	Diagnosis	ICD-10-CM
I25.7	Atherosclerosis of coronary artery bypass graft(s) and coronary artery of transplanted heart with angina pectoris	Diagnosis	ICD-10-CM
I25.70	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris	Diagnosis	ICD-10-CM
I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.71	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.72	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.73	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.75	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris	Diagnosis	ICD-10-CM
I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.76	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris	Diagnosis	ICD-10-CM
I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.79	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.8	Other forms of chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.81	Atherosclerosis of other coronary vessels without angina pectoris	Diagnosis	ICD-10-CM
I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris	Diagnosis	ICD-10-CM
I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM
I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM
I25.82	Chronic total occlusion of coronary artery	Diagnosis	ICD-10-CM
I25.83	Coronary atherosclerosis due to lipid rich plaque	Diagnosis	ICD-10-CM
I25.84	Coronary atherosclerosis due to calcified coronary lesion	Diagnosis	ICD-10-CM
I25.89	Other forms of chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.9	Chronic ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
I46.2	Cardiac arrest due to underlying cardiac condition	Diagnosis	ICD-10-CM
I46.8	Cardiac arrest due to other underlying condition	Diagnosis	ICD-10-CM
I46.9	Cardiac arrest, cause unspecified	Diagnosis	ICD-10-CM
I47.0	Re-entry ventricular arrhythmia	Diagnosis	ICD-10-CM
I47.2	Ventricular tachycardia	Diagnosis	ICD-10-CM
I70	Atherosclerosis	Diagnosis	ICD-10-CM
I70.0	Atherosclerosis of aorta	Diagnosis	ICD-10-CM
I70.1	Atherosclerosis of renal artery	Diagnosis	ICD-10-CM
I70.8	Atherosclerosis of other arteries	Diagnosis	ICD-10-CM
I70.9	Other and unspecified atherosclerosis	Diagnosis	ICD-10-CM
I70.90	Unspecified atherosclerosis	Diagnosis	ICD-10-CM
I70.91	Generalized atherosclerosis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S2205	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using arterial graft(s), single coronary arterial graft	Procedure	HCPCS
S2206	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using arterial graft(s), 2 coronary arterial grafts	Procedure	HCPCS
S2207	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using venous graft only, single coronary venous graft	Procedure	HCPCS
S2208	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using single arterial and venous graft(s), single venous graft	Procedure	HCPCS
S2209	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using 2 arterial grafts and single venous graft	Procedure	HCPCS
T82.211A	Breakdown (mechanical) of coronary artery bypass graft, initial encounter	Diagnosis	ICD-10-CM
T82.212A	Displacement of coronary artery bypass graft, initial encounter	Diagnosis	ICD-10-CM
T82.213A	Leakage of coronary artery bypass graft, initial encounter	Diagnosis	ICD-10-CM
T82.218A	Other mechanical complication of coronary artery bypass graft, initial encounter	Diagnosis	ICD-10-CM
X2C0361	Extirpation of Matter from Coronary Artery, One Artery using Orbital Atherectomy Technology, Percutaneous Approach, New Technology Group 1	Procedure	ICD-10-PCS
X2C1361	Extirpation of Matter from Coronary Artery, Two Arteries using Orbital Atherectomy Technology, Percutaneous Approach, New Technology Group 1	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
X2C2361	Extirpation of Matter from Coronary Artery, Three Arteries using Orbital Atherectomy Technology, Percutaneous Approach, New Technology Group 1	Procedure	ICD-10-PCS
X2C3361	Extirpation of Matter from Coronary Artery, Four or More Arteries using Orbital Atherectomy Technology, Percutaneous Approach, New Technology Group 1	Procedure	ICD-10-PCS
Z95.1	Presence of aortocoronary bypass graft	Diagnosis	ICD-10-CM
Z95.5	Presence of coronary angioplasty implant and graft	Diagnosis	ICD-10-CM
Z98.61	Coronary angioplasty status	Diagnosis	ICD-10-CM
<b>Cystic Fibrosis</b>			
E84	Cystic Fibrosis	Diagnosis	ICD-10-CM
E84.0	Cystic Fibrosis With Pulmonary Manifestations	Diagnosis	ICD-10-CM
E84.1	Cystic Fibrosis With Intestinal Manifestations	Diagnosis	ICD-10-CM
E84.11	Meconium Ileus In Cystic Fibrosis	Diagnosis	ICD-10-CM
E84.19	Cystic Fibrosis W/Oth Intestinal Manifestations	Diagnosis	ICD-10-CM
E84.8	Cystic Fibrosis With Other Manifestations	Diagnosis	ICD-10-CM
E84.9	Cystic Fibrosis Unspecified	Diagnosis	ICD-10-CM
<b>Diabetes Mellitus</b>			
E08.0	Diabetes mellitus due to underlying condition with hyperosmolarity	Diagnosis	ICD-10-CM
E08.00	Diabetes mellitus due to underlying condition with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E08.01	Diabetes mellitus due to underlying condition with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E08.1	Diabetes mellitus due to underlying condition with ketoacidosis	Diagnosis	ICD-10-CM
E08.10	Diabetes mellitus due to underlying condition with ketoacidosis without coma	Diagnosis	ICD-10-CM
E08.11	Diabetes mellitus due to underlying condition with ketoacidosis with coma	Diagnosis	ICD-10-CM
E08.2	Diabetes mellitus due to underlying condition with kidney complications	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E08.21	Diabetes mellitus due to underlying condition with diabetic nephropathy	Diagnosis	ICD-10-CM
E08.22	Diabetes mellitus due to underlying condition with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E08.29	Diabetes mellitus due to underlying condition with other diabetic kidney complication	Diagnosis	ICD-10-CM
E08.3	Diabetes mellitus due to underlying condition with ophthalmic complications	Diagnosis	ICD-10-CM
E08.31	Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy	Diagnosis	ICD-10-CM
E08.311	Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.319	Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.32	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E08.321	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3211	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3212	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3213	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3219	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.329	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3291	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E08.3292	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E08.3293	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3299	Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.33	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E08.331	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3311	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3312	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3313	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3319	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.339	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3391	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E08.3392	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E08.3393	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3399	Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.34	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E08.341	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3411	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3412	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3413	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3419	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.349	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3491	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E08.3492	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E08.3493	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E08.3499	Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.35	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E08.351	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E08.3511	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E08.3512	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E08.3513	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3519	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.352	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula	Diagnosis	ICD-10-CM
E08.3521	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E08.3522	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E08.3523	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E08.3529	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E08.353	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula	Diagnosis	ICD-10-CM
E08.3531	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E08.3532	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E08.3533	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E08.3539	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E08.354	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment	Diagnosis	ICD-10-CM
E08.3541	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E08.3542	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E08.3543	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E08.3549	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E08.355	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E08.3551	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E08.3552	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E08.3553	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E08.3559	Diabetes mellitus due to underlying condition with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E08.359	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E08.3591	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E08.3592	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E08.3593	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E08.3599	Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E08.36	Diabetes mellitus due to underlying condition with diabetic cataract	Diagnosis	ICD-10-CM
E08.37	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment	Diagnosis	ICD-10-CM
E08.37X1	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E08.37X2	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
E08.37X3	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E08.37X9	Diabetes mellitus due to underlying condition with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E08.39	Diabetes mellitus due to underlying condition with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E08.4	Diabetes mellitus due to underlying condition with neurological complications	Diagnosis	ICD-10-CM
E08.40	Diabetes mellitus due to underlying condition with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E08.41	Diabetes mellitus due to underlying condition with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E08.42	Diabetes mellitus due to underlying condition with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E08.43	Diabetes mellitus due to underlying condition with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E08.44	Diabetes mellitus due to underlying condition with diabetic amyotrophy	Diagnosis	ICD-10-CM
E08.49	Diabetes mellitus due to underlying condition with other diabetic neurological complication	Diagnosis	ICD-10-CM
E08.5	Diabetes mellitus due to underlying condition with circulatory complications	Diagnosis	ICD-10-CM
E08.51	Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E08.52	Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E08.59	Diabetes mellitus due to underlying condition with other circulatory complications	Diagnosis	ICD-10-CM
E08.6	Diabetes mellitus due to underlying condition with other specified complications	Diagnosis	ICD-10-CM
E08.61	Diabetes mellitus due to underlying condition with diabetic arthropathy	Diagnosis	ICD-10-CM
E08.610	Diabetes mellitus due to underlying condition with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E08.618	Diabetes mellitus due to underlying condition with other diabetic arthropathy	Diagnosis	ICD-10-CM
E08.62	Diabetes mellitus due to underlying condition with skin complications	Diagnosis	ICD-10-CM
E08.620	Diabetes mellitus due to underlying condition with diabetic dermatitis	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
E08.621	Diabetes mellitus due to underlying condition with foot ulcer	Diagnosis	ICD-10-CM
E08.622	Diabetes mellitus due to underlying condition with other skin ulcer	Diagnosis	ICD-10-CM
E08.628	Diabetes mellitus due to underlying condition with other skin complications	Diagnosis	ICD-10-CM
E08.63	Diabetes mellitus due to underlying condition with oral complications	Diagnosis	ICD-10-CM
E08.630	Diabetes mellitus due to underlying condition with periodontal disease	Diagnosis	ICD-10-CM
E08.638	Diabetes mellitus due to underlying condition with other oral complications	Diagnosis	ICD-10-CM
E08.64	Diabetes mellitus due to underlying condition with hypoglycemia	Diagnosis	ICD-10-CM
E08.641	Diabetes mellitus due to underlying condition with hypoglycemia with coma	Diagnosis	ICD-10-CM
E08.649	Diabetes mellitus due to underlying condition with hypoglycemia without coma	Diagnosis	ICD-10-CM
E08.65	Diabetes mellitus due to underlying condition with hyperglycemia	Diagnosis	ICD-10-CM
E08.69	Diabetes mellitus due to underlying condition with other specified complication	Diagnosis	ICD-10-CM
E08.8	Diabetes mellitus due to underlying condition with unspecified complications	Diagnosis	ICD-10-CM
E08.9	Diabetes mellitus due to underlying condition without complications	Diagnosis	ICD-10-CM
E09.0	Drug or chemical induced diabetes mellitus with hyperosmolarity	Diagnosis	ICD-10-CM
E09.00	Drug or chemical induced diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E09.01	Drug or chemical induced diabetes mellitus with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E09.1	Drug or chemical induced diabetes mellitus with ketoacidosis	Diagnosis	ICD-10-CM
E09.10	Drug or chemical induced diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E09.11	Drug or chemical induced diabetes mellitus with ketoacidosis with coma	Diagnosis	ICD-10-CM
E09.2	Drug or chemical induced diabetes mellitus with kidney complications	Diagnosis	ICD-10-CM
E09.21	Drug or chemical induced diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E09.22	Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E09.29	Drug or chemical induced diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
E09.3	Drug or chemical induced diabetes mellitus with ophthalmic complications	Diagnosis	ICD-10-CM
E09.31	Drug or chemical induced diabetes mellitus with unspecified diabetic retinopathy	Diagnosis	ICD-10-CM
E09.311	Drug or chemical induced diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.319	Drug or chemical induced diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.32	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E09.321	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3211	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3212	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3213	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3219	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.329	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3291	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3292	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E09.3293	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3299	Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.33	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E09.331	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3311	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3312	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3313	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3319	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.339	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3391	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3392	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E09.3393	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM



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Code	Description	Code Category	Code Type
E09.3399	Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.34	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E09.341	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3411	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3412	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3413	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3419	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.349	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3491	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3492	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E09.3493	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3499	Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.35	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E09.351	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E09.3511	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E09.3512	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E09.3513	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3519	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.352	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula	Diagnosis	ICD-10-CM
E09.3521	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E09.3522	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E09.3523	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E09.3529	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E09.353	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula	Diagnosis	ICD-10-CM
E09.3531	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E09.3532	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E09.3533	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E09.3539	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E09.354	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment	Diagnosis	ICD-10-CM
E09.3541	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E09.3542	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E09.3543	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E09.3549	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E09.355	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E09.3551	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E09.3552	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E09.3553	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E09.3559	Drug or chemical induced diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E09.359	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E09.3591	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E09.3592	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E09.3593	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E09.3599	Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E09.36	Drug or chemical induced diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E09.37	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment	Diagnosis	ICD-10-CM
E09.37X1	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E09.37X2	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E09.37X3	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E09.37X9	Drug or chemical induced diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E09.39	Drug or chemical induced diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E09.4	Drug or chemical induced diabetes mellitus with neurological complications	Diagnosis	ICD-10-CM
E09.40	Drug or chemical induced diabetes mellitus with neurological complications with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E09.41	Drug or chemical induced diabetes mellitus with neurological complications with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E09.42	Drug or chemical induced diabetes mellitus with neurological complications with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E09.43	Drug or chemical induced diabetes mellitus with neurological complications with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E09.44	Drug or chemical induced diabetes mellitus with neurological complications with diabetic amyotrophy	Diagnosis	ICD-10-CM
E09.49	Drug or chemical induced diabetes mellitus with neurological complications with other diabetic neurological complication	Diagnosis	ICD-10-CM
E09.5	Drug or chemical induced diabetes mellitus with circulatory complications	Diagnosis	ICD-10-CM
E09.51	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E09.52	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E09.59	Drug or chemical induced diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E09.6	Drug or chemical induced diabetes mellitus with other specified complications	Diagnosis	ICD-10-CM
E09.61	Drug or chemical induced diabetes mellitus with diabetic arthropathy	Diagnosis	ICD-10-CM
E09.610	Drug or chemical induced diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E09.618	Drug or chemical induced diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E09.62	Drug or chemical induced diabetes mellitus with skin complications	Diagnosis	ICD-10-CM
E09.620	Drug or chemical induced diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E09.621	Drug or chemical induced diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E09.622	Drug or chemical induced diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E09.628	Drug or chemical induced diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E09.63	Drug or chemical induced diabetes mellitus with oral complications	Diagnosis	ICD-10-CM
E09.630	Drug or chemical induced diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E09.638	Drug or chemical induced diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E09.64	Drug or chemical induced diabetes mellitus with hypoglycemia	Diagnosis	ICD-10-CM
E09.641	Drug or chemical induced diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM
E09.649	Drug or chemical induced diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E09.65	Drug or chemical induced diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E09.69	Drug or chemical induced diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E09.8	Drug or chemical induced diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E09.9	Drug or chemical induced diabetes mellitus without complications	Diagnosis	ICD-10-CM
E10.1	Type 1 diabetes mellitus with ketoacidosis	Diagnosis	ICD-10-CM
E10.10	Type 1 diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E10.11	Type 1 diabetes mellitus with ketoacidosis with coma	Diagnosis	ICD-10-CM
E10.2	Type 1 diabetes mellitus with kidney complications	Diagnosis	ICD-10-CM
E10.21	Type 1 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E10.29	Type 1 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E10.3	Type 1 diabetes mellitus with ophthalmic complications	Diagnosis	ICD-10-CM
E10.31	Type 1 diabetes mellitus with unspecified diabetic retinopathy	Diagnosis	ICD-10-CM
E10.311	Type 1 diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.319	Type 1 diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E10.32	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.321	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.3211	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3212	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3213	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3219	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.329	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3291	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3292	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3293	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3299	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.33	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.331	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.3311	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E10.3312	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3313	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3319	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.339	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3391	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3392	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3393	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3399	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.34	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.341	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.3411	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3412	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3413	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
E10.3419	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.349	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3491	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3492	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3493	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3499	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.35	Type 1 diabetes mellitus with proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.351	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.3511	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3512	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3513	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3519	Type 1 diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.352	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula	Diagnosis	ICD-10-CM
E10.3521	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E10.3522	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E10.3523	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E10.3529	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E10.353	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula	Diagnosis	ICD-10-CM
E10.3531	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E10.3532	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E10.3533	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E10.3539	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E10.354	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment	Diagnosis	ICD-10-CM
E10.3541	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E10.3542	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E10.3543	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E10.3549	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E10.355	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.3551	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E10.3552	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E10.3553	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E10.3559	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E10.359	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3591	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3592	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3593	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3599	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.36	Type 1 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E10.37	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment	Diagnosis	ICD-10-CM
E10.37X1	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E10.37X2	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E10.37X3	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E10.37X9	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E10.39	Type 1 diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E10.4	Type 1 diabetes mellitus with neurological complications	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E10.40	Type 1 diabetes mellitus with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E10.41	Type 1 diabetes mellitus with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E10.42	Type 1 diabetes mellitus with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E10.43	Type 1 diabetes mellitus with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E10.44	Type 1 diabetes mellitus with diabetic amyotrophy	Diagnosis	ICD-10-CM
E10.49	Type 1 diabetes mellitus with other diabetic neurological complication	Diagnosis	ICD-10-CM
E10.5	Type 1 diabetes mellitus with circulatory complications	Diagnosis	ICD-10-CM
E10.51	Type 1 diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E10.52	Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E10.59	Type 1 diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E10.6	Type 1 diabetes mellitus with other specified complications	Diagnosis	ICD-10-CM
E10.61	Type 1 diabetes mellitus with diabetic arthropathy	Diagnosis	ICD-10-CM
E10.610	Type 1 diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E10.618	Type 1 diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E10.62	Type 1 diabetes mellitus with skin complications	Diagnosis	ICD-10-CM
E10.620	Type 1 diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E10.621	Type 1 diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E10.622	Type 1 diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E10.628	Type 1 diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E10.63	Type 1 diabetes mellitus with oral complications	Diagnosis	ICD-10-CM
E10.630	Type 1 diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E10.638	Type 1 diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E10.64	Type 1 diabetes mellitus with hypoglycemia	Diagnosis	ICD-10-CM
E10.641	Type 1 diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
E10.649	Type 1 diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E10.65	Type 1 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E10.69	Type 1 diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E10.8	Type 1 diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E10.9	Type 1 diabetes mellitus without complications	Diagnosis	ICD-10-CM
E11.0	Type 2 diabetes mellitus with hyperosmolarity	Diagnosis	ICD-10-CM
E11.00	Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E11.01	Type 2 diabetes mellitus with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E11.1	Type 2 diabetes mellitus with ketoacidosis	Diagnosis	ICD-10-CM
E11.10	Type 2 diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E11.11	Type 2 diabetes mellitus with ketoacidosis with coma	Diagnosis	ICD-10-CM
E11.2	Type 2 diabetes mellitus with kidney complications	Diagnosis	ICD-10-CM
E11.21	Type 2 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E11.29	Type 2 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E11.3	Type 2 diabetes mellitus with ophthalmic complications	Diagnosis	ICD-10-CM
E11.31	Type 2 diabetes mellitus with unspecified diabetic retinopathy	Diagnosis	ICD-10-CM
E11.311	Type 2 diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.319	Type 2 diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.32	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.321	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.3211	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E11.3212	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3213	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3219	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.329	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.3291	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3292	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3293	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3299	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.33	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.331	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.3311	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3312	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3313	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E11.3319	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.339	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.3391	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3392	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3393	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3399	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.34	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.341	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.3411	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3412	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3413	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3419	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.349	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E11.3491	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3492	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3493	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3499	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.35	Type 2 diabetes mellitus with proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.351	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.3511	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3512	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3513	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3519	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.352	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula	Diagnosis	ICD-10-CM
E11.3521	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM
E11.3522	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E11.3523	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E11.3529	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E11.353	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula	Diagnosis	ICD-10-CM
E11.3531	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E11.3532	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E11.3533	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E11.3539	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E11.354	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment	Diagnosis	ICD-10-CM
E11.3541	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E11.3542	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E11.3543	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM
E11.3549	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E11.355	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.3551	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E11.3552	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E11.3553	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E11.3559	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E11.359	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.3591	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3592	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3593	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3599	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.36	Type 2 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E11.37	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment	Diagnosis	ICD-10-CM
E11.37X1	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E11.37X2	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E11.37X3	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM
E11.37X9	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E11.39	Type 2 diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E11.4	Type 2 diabetes mellitus with neurological complications	Diagnosis	ICD-10-CM
E11.40	Type 2 diabetes mellitus with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E11.41	Type 2 diabetes mellitus with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E11.42	Type 2 diabetes mellitus with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E11.43	Type 2 diabetes mellitus with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E11.44	Type 2 diabetes mellitus with diabetic amyotrophy	Diagnosis	ICD-10-CM
E11.49	Type 2 diabetes mellitus with other diabetic neurological complication	Diagnosis	ICD-10-CM
E11.5	Type 2 diabetes mellitus with circulatory complications	Diagnosis	ICD-10-CM
E11.51	Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E11.52	Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E11.59	Type 2 diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E11.6	Type 2 diabetes mellitus with other specified complications	Diagnosis	ICD-10-CM
E11.61	Type 2 diabetes mellitus with diabetic arthropathy	Diagnosis	ICD-10-CM
E11.610	Type 2 diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E11.618	Type 2 diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E11.62	Type 2 diabetes mellitus with skin complications	Diagnosis	ICD-10-CM
E11.620	Type 2 diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E11.621	Type 2 diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E11.622	Type 2 diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E11.628	Type 2 diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E11.63	Type 2 diabetes mellitus with oral complications	Diagnosis	ICD-10-CM
E11.630	Type 2 diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E11.638	Type 2 diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E11.64	Type 2 diabetes mellitus with hypoglycemia	Diagnosis	ICD-10-CM
E11.641	Type 2 diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM
E11.649	Type 2 diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E11.65	Type 2 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E11.69	Type 2 diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E11.8	Type 2 diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E11.9	Type 2 diabetes mellitus without complications	Diagnosis	ICD-10-CM
E13.0	Other specified diabetes mellitus with hyperosmolarity	Diagnosis	ICD-10-CM
E13.00	Other specified diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E13.01	Other specified diabetes mellitus with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E13.1	Other specified diabetes mellitus with ketoacidosis	Diagnosis	ICD-10-CM
E13.10	Other specified diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E13.11	Other specified diabetes mellitus with ketoacidosis with coma	Diagnosis	ICD-10-CM
E13.2	Other specified diabetes mellitus with kidney complications	Diagnosis	ICD-10-CM
E13.21	Other specified diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E13.22	Other specified diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E13.29	Other specified diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E13.3	Other specified diabetes mellitus with ophthalmic complications	Diagnosis	ICD-10-CM
E13.31	Other specified diabetes mellitus with unspecified diabetic retinopathy	Diagnosis	ICD-10-CM
E13.311	Other specified diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.319	Other specified diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.32	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E13.321	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3211	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3212	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E13.3213	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3219	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.329	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.3291	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E13.3292	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E13.3293	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3299	Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.33	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E13.331	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3311	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3312	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E13.3313	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E13.3319	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.339	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.3391	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E13.3392	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E13.3393	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3399	Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.34	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E13.341	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3411	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3412	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E13.3413	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3419	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E13.349	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.3491	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E13.3492	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E13.3493	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3499	Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.35	Other specified diabetes mellitus with proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E13.351	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E13.3511	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E13.3512	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E13.3513	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3519	Other specified diabetes mellitus with proliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.352	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula	Diagnosis	ICD-10-CM
E13.3521	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, right eye	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E13.3522	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, left eye	Diagnosis	ICD-10-CM
E13.3523	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, bilateral	Diagnosis	ICD-10-CM
E13.3529	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E13.353	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula	Diagnosis	ICD-10-CM
E13.3531	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, right eye	Diagnosis	ICD-10-CM
E13.3532	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, left eye	Diagnosis	ICD-10-CM
E13.3533	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, bilateral	Diagnosis	ICD-10-CM
E13.3539	Other specified diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula, unspecified eye	Diagnosis	ICD-10-CM
E13.354	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment	Diagnosis	ICD-10-CM
E13.3541	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E13.3542	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E13.3543	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E13.3549	Other specified diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E13.355	Other specified diabetes mellitus with stable proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E13.3551	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E13.3552	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E13.3553	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E13.3559	Other specified diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E13.359	Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E13.3591	Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E13.3592	Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E13.3593	Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E13.3599	Other specified diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E13.36	Other specified diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E13.37	Other specified diabetes mellitus with diabetic macular edema, resolved following treatment	Diagnosis	ICD-10-CM
E13.37X1	Other specified diabetes mellitus with diabetic macular edema, resolved following treatment, right eye	Diagnosis	ICD-10-CM
E13.37X2	Other specified diabetes mellitus with diabetic macular edema, resolved following treatment, left eye	Diagnosis	ICD-10-CM
E13.37X3	Other specified diabetes mellitus with diabetic macular edema, resolved following treatment, bilateral	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E13.37X9	Other specified diabetes mellitus with diabetic macular edema, resolved following treatment, unspecified eye	Diagnosis	ICD-10-CM
E13.39	Other specified diabetes mellitus with other diabetic ophthalmic complication	Diagnosis	ICD-10-CM
E13.4	Other specified diabetes mellitus with neurological complications	Diagnosis	ICD-10-CM
E13.40	Other specified diabetes mellitus with diabetic neuropathy, unspecified	Diagnosis	ICD-10-CM
E13.41	Other specified diabetes mellitus with diabetic mononeuropathy	Diagnosis	ICD-10-CM
E13.42	Other specified diabetes mellitus with diabetic polyneuropathy	Diagnosis	ICD-10-CM
E13.43	Other specified diabetes mellitus with diabetic autonomic (poly)neuropathy	Diagnosis	ICD-10-CM
E13.44	Other specified diabetes mellitus with diabetic amyotrophy	Diagnosis	ICD-10-CM
E13.49	Other specified diabetes mellitus with other diabetic neurological complication	Diagnosis	ICD-10-CM
E13.5	Other specified diabetes mellitus with circulatory complications	Diagnosis	ICD-10-CM
E13.51	Other specified diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E13.52	Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E13.59	Other specified diabetes mellitus with other circulatory complications	Diagnosis	ICD-10-CM
E13.6	Other specified diabetes mellitus with other specified complications	Diagnosis	ICD-10-CM
E13.61	Other specified diabetes mellitus with diabetic arthropathy	Diagnosis	ICD-10-CM
E13.610	Other specified diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM
E13.618	Other specified diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E13.62	Other specified diabetes mellitus with skin complications	Diagnosis	ICD-10-CM
E13.620	Other specified diabetes mellitus with diabetic dermatitis	Diagnosis	ICD-10-CM
E13.621	Other specified diabetes mellitus with foot ulcer	Diagnosis	ICD-10-CM
E13.622	Other specified diabetes mellitus with other skin ulcer	Diagnosis	ICD-10-CM
E13.628	Other specified diabetes mellitus with other skin complications	Diagnosis	ICD-10-CM
E13.63	Other specified diabetes mellitus with oral complications	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
E13.630	Other specified diabetes mellitus with periodontal disease	Diagnosis	ICD-10-CM
E13.638	Other specified diabetes mellitus with other oral complications	Diagnosis	ICD-10-CM
E13.64	Other specified diabetes mellitus with hypoglycemia	Diagnosis	ICD-10-CM
E13.641	Other specified diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM
E13.649	Other specified diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E13.65	Other specified diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E13.69	Other specified diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E13.8	Other specified diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E13.9	Other specified diabetes mellitus without complications	Diagnosis	ICD-10-CM
<b>Drug Abuse/Dependence</b>			
F11.10	Opioid abuse, uncomplicated	Diagnosis	ICD-10-CM
F11.11	Opioid abuse, in remission	Diagnosis	ICD-10-CM
F11.120	Opioid abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F11.121	Opioid abuse with intoxication delirium	Diagnosis	ICD-10-CM
F11.122	Opioid abuse with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F11.129	Opioid abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F11.14	Opioid abuse with opioid-induced mood disorder	Diagnosis	ICD-10-CM
F11.150	Opioid abuse with opioid-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F11.151	Opioid abuse with opioid-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F11.159	Opioid abuse with opioid-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F11.181	Opioid abuse with opioid-induced sexual dysfunction	Diagnosis	ICD-10-CM
F11.182	Opioid abuse with opioid-induced sleep disorder	Diagnosis	ICD-10-CM
F11.188	Opioid abuse with other opioid-induced disorder	Diagnosis	ICD-10-CM
F11.19	Opioid abuse with unspecified opioid-induced disorder	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F11.220	Opioid dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F11.221	Opioid dependence with intoxication delirium	Diagnosis	ICD-10-CM
F11.222	Opioid dependence with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F11.229	Opioid dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F11.23	Opioid dependence with withdrawal	Diagnosis	ICD-10-CM
F11.24	Opioid dependence with opioid-induced mood disorder	Diagnosis	ICD-10-CM
F11.250	Opioid dependence with opioid-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F11.251	Opioid dependence with opioid-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F11.259	Opioid dependence with opioid-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F11.281	Opioid dependence with opioid-induced sexual dysfunction	Diagnosis	ICD-10-CM
F11.282	Opioid dependence with opioid-induced sleep disorder	Diagnosis	ICD-10-CM
F11.288	Opioid dependence with other opioid-induced disorder	Diagnosis	ICD-10-CM
F11.29	Opioid dependence with unspecified opioid-induced disorder	Diagnosis	ICD-10-CM
F11.90	Opioid use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F11.920	Opioid use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F11.921	Opioid use, unspecified with intoxication delirium	Diagnosis	ICD-10-CM
F11.922	Opioid use, unspecified with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F11.929	Opioid use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F11.93	Opioid use, unspecified with withdrawal	Diagnosis	ICD-10-CM
F11.94	Opioid use, unspecified with opioid-induced mood disorder	Diagnosis	ICD-10-CM
F11.950	Opioid use, unspecified with opioid-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F11.951	Opioid use, unspecified with opioid-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F11.959	Opioid use, unspecified with opioid-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F11.981	Opioid use, unspecified with opioid-induced sexual dysfunction	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F11.982	Opioid use, unspecified with opioid-induced sleep disorder	Diagnosis	ICD-10-CM
F11.988	Opioid use, unspecified with other opioid-induced disorder	Diagnosis	ICD-10-CM
F11.99	Opioid use, unspecified with unspecified opioid-induced disorder	Diagnosis	ICD-10-CM
F12.10	Cannabis abuse, uncomplicated	Diagnosis	ICD-10-CM
F12.11	Cannabis abuse, in remission	Diagnosis	ICD-10-CM
F12.120	Cannabis abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F12.121	Cannabis abuse with intoxication delirium	Diagnosis	ICD-10-CM
F12.122	Cannabis abuse with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F12.129	Cannabis abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F12.150	Cannabis abuse with psychotic disorder with delusions	Diagnosis	ICD-10-CM
F12.151	Cannabis abuse with psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F12.159	Cannabis abuse with psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F12.180	Cannabis abuse with cannabis-induced anxiety disorder	Diagnosis	ICD-10-CM
F12.188	Cannabis abuse with other cannabis-induced disorder	Diagnosis	ICD-10-CM
F12.19	Cannabis abuse with unspecified cannabis-induced disorder	Diagnosis	ICD-10-CM
F12.220	Cannabis dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F12.221	Cannabis dependence with intoxication delirium	Diagnosis	ICD-10-CM
F12.222	Cannabis dependence with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F12.229	Cannabis dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F12.250	Cannabis dependence with psychotic disorder with delusions	Diagnosis	ICD-10-CM
F12.251	Cannabis dependence with psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F12.259	Cannabis dependence with psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F12.280	Cannabis dependence with cannabis-induced anxiety disorder	Diagnosis	ICD-10-CM
F12.288	Cannabis dependence with other cannabis-induced disorder	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F12.29	Cannabis dependence with unspecified cannabis-induced disorder	Diagnosis	ICD-10-CM
F12.90	Cannabis use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F12.920	Cannabis use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F12.921	Cannabis use, unspecified with intoxication delirium	Diagnosis	ICD-10-CM
F12.922	Cannabis use, unspecified with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F12.929	Cannabis use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F12.950	Cannabis use, unspecified with psychotic disorder with delusions	Diagnosis	ICD-10-CM
F12.951	Cannabis use, unspecified with psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F12.959	Cannabis use, unspecified with psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F12.980	Cannabis use, unspecified with anxiety disorder	Diagnosis	ICD-10-CM
F12.988	Cannabis use, unspecified with other cannabis-induced disorder	Diagnosis	ICD-10-CM
F12.99	Cannabis use, unspecified with unspecified cannabis-induced disorder	Diagnosis	ICD-10-CM
F13.10	Sedative, hypnotic or anxiolytic abuse, uncomplicated	Diagnosis	ICD-10-CM
F13.11	Sedative, hypnotic or anxiolytic abuse, in remission	Diagnosis	ICD-10-CM
F13.120	Sedative, hypnotic or anxiolytic abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F13.121	Sedative, hypnotic or anxiolytic abuse with intoxication delirium	Diagnosis	ICD-10-CM
F13.129	Sedative, hypnotic or anxiolytic abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F13.14	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced mood disorder	Diagnosis	ICD-10-CM
F13.150	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F13.151	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
F13.159	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F13.180	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced anxiety disorder	Diagnosis	ICD-10-CM
F13.181	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced sexual dysfunction	Diagnosis	ICD-10-CM
F13.182	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced sleep disorder	Diagnosis	ICD-10-CM
F13.188	Sedative, hypnotic or anxiolytic abuse with other sedative, hypnotic or anxiolytic-induced disorder	Diagnosis	ICD-10-CM
F13.19	Sedative, hypnotic or anxiolytic abuse with unspecified sedative, hypnotic or anxiolytic-induced disorder	Diagnosis	ICD-10-CM
F13.220	Sedative, hypnotic or anxiolytic dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F13.221	Sedative, hypnotic or anxiolytic dependence with intoxication delirium	Diagnosis	ICD-10-CM
F13.229	Sedative, hypnotic or anxiolytic dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F13.230	Sedative, hypnotic or anxiolytic dependence with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F13.231	Sedative, hypnotic or anxiolytic dependence with withdrawal delirium	Diagnosis	ICD-10-CM
F13.232	Sedative, hypnotic or anxiolytic dependence with withdrawal with perceptual disturbance	Diagnosis	ICD-10-CM
F13.239	Sedative, hypnotic or anxiolytic dependence with withdrawal, unspecified	Diagnosis	ICD-10-CM
F13.24	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced mood disorder	Diagnosis	ICD-10-CM
F13.250	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F13.251	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F13.259	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F13.26	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced persisting amnestic disorder	Diagnosis	ICD-10-CM
F13.27	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced persisting dementia	Diagnosis	ICD-10-CM
F13.280	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced anxiety disorder	Diagnosis	ICD-10-CM
F13.281	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced sexual dysfunction	Diagnosis	ICD-10-CM
F13.282	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced sleep disorder	Diagnosis	ICD-10-CM
F13.288	Sedative, hypnotic or anxiolytic dependence with other sedative, hypnotic or anxiolytic-induced disorder	Diagnosis	ICD-10-CM
F13.29	Sedative, hypnotic or anxiolytic dependence with unspecified sedative, hypnotic or anxiolytic-induced disorder	Diagnosis	ICD-10-CM
F13.90	Sedative, hypnotic, or anxiolytic use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F13.920	Sedative, hypnotic or anxiolytic use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F13.921	Sedative, hypnotic or anxiolytic use, unspecified with intoxication delirium	Diagnosis	ICD-10-CM
F13.929	Sedative, hypnotic or anxiolytic use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F13.930	Sedative, hypnotic or anxiolytic use, unspecified with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F13.931	Sedative, hypnotic or anxiolytic use, unspecified with withdrawal delirium	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F13.932	Sedative, hypnotic or anxiolytic use, unspecified with withdrawal with perceptual disturbances	Diagnosis	ICD-10-CM
F13.939	Sedative, hypnotic or anxiolytic use, unspecified with withdrawal, unspecified	Diagnosis	ICD-10-CM
F13.94	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced mood disorder	Diagnosis	ICD-10-CM
F13.950	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F13.951	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F13.959	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F13.96	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced persisting amnestic disorder	Diagnosis	ICD-10-CM
F13.97	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced persisting dementia	Diagnosis	ICD-10-CM
F13.980	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced anxiety disorder	Diagnosis	ICD-10-CM
F13.981	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced sexual dysfunction	Diagnosis	ICD-10-CM
F13.982	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced sleep disorder	Diagnosis	ICD-10-CM
F13.988	Sedative, hypnotic or anxiolytic use, unspecified with other sedative, hypnotic or anxiolytic-induced disorder	Diagnosis	ICD-10-CM
F13.99	Sedative, hypnotic or anxiolytic use, unspecified with unspecified sedative, hypnotic or anxiolytic-induced disorder	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F14.10	Cocaine abuse, uncomplicated	Diagnosis	ICD-10-CM
F14.11	Cocaine abuse, in remission	Diagnosis	ICD-10-CM
F14.120	Cocaine abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F14.121	Cocaine abuse with intoxication with delirium	Diagnosis	ICD-10-CM
F14.122	Cocaine abuse with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F14.129	Cocaine abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F14.14	Cocaine abuse with cocaine-induced mood disorder	Diagnosis	ICD-10-CM
F14.150	Cocaine abuse with cocaine-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F14.151	Cocaine abuse with cocaine-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F14.159	Cocaine abuse with cocaine-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F14.180	Cocaine abuse with cocaine-induced anxiety disorder	Diagnosis	ICD-10-CM
F14.181	Cocaine abuse with cocaine-induced sexual dysfunction	Diagnosis	ICD-10-CM
F14.182	Cocaine abuse with cocaine-induced sleep disorder	Diagnosis	ICD-10-CM
F14.188	Cocaine abuse with other cocaine-induced disorder	Diagnosis	ICD-10-CM
F14.19	Cocaine abuse with unspecified cocaine-induced disorder	Diagnosis	ICD-10-CM
F14.220	Cocaine dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F14.221	Cocaine dependence with intoxication delirium	Diagnosis	ICD-10-CM
F14.222	Cocaine dependence with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F14.229	Cocaine dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F14.23	Cocaine dependence with withdrawal	Diagnosis	ICD-10-CM
F14.24	Cocaine dependence with cocaine-induced mood disorder	Diagnosis	ICD-10-CM
F14.250	Cocaine dependence with cocaine-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F14.251	Cocaine dependence with cocaine-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F14.259	Cocaine dependence with cocaine-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F14.280	Cocaine dependence with cocaine-induced anxiety disorder	Diagnosis	ICD-10-CM
F14.281	Cocaine dependence with cocaine-induced sexual dysfunction	Diagnosis	ICD-10-CM
F14.282	Cocaine dependence with cocaine-induced sleep disorder	Diagnosis	ICD-10-CM
F14.288	Cocaine dependence with other cocaine-induced disorder	Diagnosis	ICD-10-CM
F14.29	Cocaine dependence with unspecified cocaine-induced disorder	Diagnosis	ICD-10-CM
F14.90	Cocaine use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F14.920	Cocaine use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F14.921	Cocaine use, unspecified with intoxication delirium	Diagnosis	ICD-10-CM
F14.922	Cocaine use, unspecified with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F14.929	Cocaine use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F14.94	Cocaine use, unspecified with cocaine-induced mood disorder	Diagnosis	ICD-10-CM
F14.950	Cocaine use, unspecified with cocaine-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F14.951	Cocaine use, unspecified with cocaine-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F14.959	Cocaine use, unspecified with cocaine-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F14.980	Cocaine use, unspecified with cocaine-induced anxiety disorder	Diagnosis	ICD-10-CM
F14.981	Cocaine use, unspecified with cocaine-induced sexual dysfunction	Diagnosis	ICD-10-CM
F14.982	Cocaine use, unspecified with cocaine-induced sleep disorder	Diagnosis	ICD-10-CM
F14.988	Cocaine use, unspecified with other cocaine-induced disorder	Diagnosis	ICD-10-CM
F14.99	Cocaine use, unspecified with unspecified cocaine-induced disorder	Diagnosis	ICD-10-CM
F15.10	Other stimulant abuse, uncomplicated	Diagnosis	ICD-10-CM
F15.11	Other stimulant abuse, in remission	Diagnosis	ICD-10-CM
F15.120	Other stimulant abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F15.121	Other stimulant abuse with intoxication delirium	Diagnosis	ICD-10-CM
F15.122	Other stimulant abuse with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F15.129	Other stimulant abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F15.14	Other stimulant abuse with stimulant-induced mood disorder	Diagnosis	ICD-10-CM
F15.150	Other stimulant abuse with stimulant-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F15.151	Other stimulant abuse with stimulant-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F15.159	Other stimulant abuse with stimulant-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F15.180	Other stimulant abuse with stimulant-induced anxiety disorder	Diagnosis	ICD-10-CM
F15.181	Other stimulant abuse with stimulant-induced sexual dysfunction	Diagnosis	ICD-10-CM
F15.182	Other stimulant abuse with stimulant-induced sleep disorder	Diagnosis	ICD-10-CM
F15.188	Other stimulant abuse with other stimulant-induced disorder	Diagnosis	ICD-10-CM
F15.19	Other stimulant abuse with unspecified stimulant-induced disorder	Diagnosis	ICD-10-CM
F15.220	Other stimulant dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F15.221	Other stimulant dependence with intoxication delirium	Diagnosis	ICD-10-CM
F15.222	Other stimulant dependence with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F15.229	Other stimulant dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F15.23	Other stimulant dependence with withdrawal	Diagnosis	ICD-10-CM
F15.24	Other stimulant dependence with stimulant-induced mood disorder	Diagnosis	ICD-10-CM
F15.250	Other stimulant dependence with stimulant-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F15.251	Other stimulant dependence with stimulant-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F15.259	Other stimulant dependence with stimulant-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F15.280	Other stimulant dependence with stimulant-induced anxiety disorder	Diagnosis	ICD-10-CM
F15.281	Other stimulant dependence with stimulant-induced sexual dysfunction	Diagnosis	ICD-10-CM
F15.282	Other stimulant dependence with stimulant-induced sleep disorder	Diagnosis	ICD-10-CM
F15.288	Other stimulant dependence with other stimulant-induced disorder	Diagnosis	ICD-10-CM
F15.29	Other stimulant dependence with unspecified stimulant-induced disorder	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F15.90	Other stimulant use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F15.920	Other stimulant use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F15.921	Other stimulant use, unspecified with intoxication delirium	Diagnosis	ICD-10-CM
F15.922	Other stimulant use, unspecified with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F15.929	Other stimulant use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F15.93	Other stimulant use, unspecified with withdrawal	Diagnosis	ICD-10-CM
F15.94	Other stimulant use, unspecified with stimulant-induced mood disorder	Diagnosis	ICD-10-CM
F15.950	Other stimulant use, unspecified with stimulant-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F15.951	Other stimulant use, unspecified with stimulant-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F15.959	Other stimulant use, unspecified with stimulant-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F15.980	Other stimulant use, unspecified with stimulant-induced anxiety disorder	Diagnosis	ICD-10-CM
F15.981	Other stimulant use, unspecified with stimulant-induced sexual dysfunction	Diagnosis	ICD-10-CM
F15.982	Other stimulant use, unspecified with stimulant-induced sleep disorder	Diagnosis	ICD-10-CM
F15.988	Other stimulant use, unspecified with other stimulant-induced disorder	Diagnosis	ICD-10-CM
F15.99	Other stimulant use, unspecified with unspecified stimulant-induced disorder	Diagnosis	ICD-10-CM
F16.10	Hallucinogen abuse, uncomplicated	Diagnosis	ICD-10-CM
F16.11	Hallucinogen abuse, in remission	Diagnosis	ICD-10-CM
F16.120	Hallucinogen abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F16.121	Hallucinogen abuse with intoxication with delirium	Diagnosis	ICD-10-CM
F16.122	Hallucinogen abuse with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F16.129	Hallucinogen abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F16.14	Hallucinogen abuse with hallucinogen-induced mood disorder	Diagnosis	ICD-10-CM
F16.150	Hallucinogen abuse with hallucinogen-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F16.151	Hallucinogen abuse with hallucinogen-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F16.159	Hallucinogen abuse with hallucinogen-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F16.180	Hallucinogen abuse with hallucinogen-induced anxiety disorder	Diagnosis	ICD-10-CM
F16.183	Hallucinogen abuse with hallucinogen persisting perception disorder (flashbacks)	Diagnosis	ICD-10-CM
F16.188	Hallucinogen abuse with other hallucinogen-induced disorder	Diagnosis	ICD-10-CM
F16.19	Hallucinogen abuse with unspecified hallucinogen-induced disorder	Diagnosis	ICD-10-CM
F16.220	Hallucinogen dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F16.221	Hallucinogen dependence with intoxication with delirium	Diagnosis	ICD-10-CM
F16.229	Hallucinogen dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F16.24	Hallucinogen dependence with hallucinogen-induced mood disorder	Diagnosis	ICD-10-CM
F16.250	Hallucinogen dependence with hallucinogen-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F16.251	Hallucinogen dependence with hallucinogen-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F16.259	Hallucinogen dependence with hallucinogen-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F16.280	Hallucinogen dependence with hallucinogen-induced anxiety disorder	Diagnosis	ICD-10-CM
F16.283	Hallucinogen dependence with hallucinogen persisting perception disorder (flashbacks)	Diagnosis	ICD-10-CM
F16.288	Hallucinogen dependence with other hallucinogen-induced disorder	Diagnosis	ICD-10-CM
F16.29	Hallucinogen dependence with unspecified hallucinogen-induced disorder	Diagnosis	ICD-10-CM
F16.90	Hallucinogen use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F16.920	Hallucinogen use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F16.921	Hallucinogen use, unspecified with intoxication with delirium	Diagnosis	ICD-10-CM
F16.929	Hallucinogen use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F16.94	Hallucinogen use, unspecified with hallucinogen-induced mood disorder	Diagnosis	ICD-10-CM
F16.950	Hallucinogen use, unspecified with hallucinogen-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F16.951	Hallucinogen use, unspecified with hallucinogen-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F16.959	Hallucinogen use, unspecified with hallucinogen-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F16.980	Hallucinogen use, unspecified with hallucinogen-induced anxiety disorder	Diagnosis	ICD-10-CM
F16.983	Hallucinogen use, unspecified with hallucinogen persisting perception disorder (flashbacks)	Diagnosis	ICD-10-CM
F16.988	Hallucinogen use, unspecified with other hallucinogen-induced disorder	Diagnosis	ICD-10-CM
F16.99	Hallucinogen use, unspecified with unspecified hallucinogen-induced disorder	Diagnosis	ICD-10-CM
F17.203	Nicotine dependence unspecified, with withdrawal	Diagnosis	ICD-10-CM
F17.208	Nicotine dependence, unspecified, with other nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.209	Nicotine dependence, unspecified, with unspecified nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.213	Nicotine dependence, cigarettes, with withdrawal	Diagnosis	ICD-10-CM
F17.218	Nicotine dependence, cigarettes, with other nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.219	Nicotine dependence, cigarettes, with unspecified nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.223	Nicotine dependence, chewing tobacco, with withdrawal	Diagnosis	ICD-10-CM
F17.228	Nicotine dependence, chewing tobacco, with other nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.229	Nicotine dependence, chewing tobacco, with unspecified nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.293	Nicotine dependence, other tobacco product, with withdrawal	Diagnosis	ICD-10-CM
F17.298	Nicotine dependence, other tobacco product, with other nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.299	Nicotine dependence, other tobacco product, with unspecified nicotine-induced disorders	Diagnosis	ICD-10-CM
F18.10	Inhalant abuse, uncomplicated	Diagnosis	ICD-10-CM
F18.11	Inhalant abuse, in remission	Diagnosis	ICD-10-CM
F18.120	Inhalant abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F18.121	Inhalant abuse with intoxication delirium	Diagnosis	ICD-10-CM
F18.129	Inhalant abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F18.14	Inhalant abuse with inhalant-induced mood disorder	Diagnosis	ICD-10-CM
F18.150	Inhalant abuse with inhalant-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F18.151	Inhalant abuse with inhalant-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F18.159	Inhalant abuse with inhalant-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F18.17	Inhalant abuse with inhalant-induced dementia	Diagnosis	ICD-10-CM
F18.180	Inhalant abuse with inhalant-induced anxiety disorder	Diagnosis	ICD-10-CM
F18.188	Inhalant abuse with other inhalant-induced disorder	Diagnosis	ICD-10-CM
F18.19	Inhalant abuse with unspecified inhalant-induced disorder	Diagnosis	ICD-10-CM
F18.220	Inhalant dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F18.221	Inhalant dependence with intoxication delirium	Diagnosis	ICD-10-CM
F18.229	Inhalant dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F18.24	Inhalant dependence with inhalant-induced mood disorder	Diagnosis	ICD-10-CM
F18.250	Inhalant dependence with inhalant-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F18.251	Inhalant dependence with inhalant-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F18.259	Inhalant dependence with inhalant-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F18.27	Inhalant dependence with inhalant-induced dementia	Diagnosis	ICD-10-CM
F18.280	Inhalant dependence with inhalant-induced anxiety disorder	Diagnosis	ICD-10-CM
F18.288	Inhalant dependence with other inhalant-induced disorder	Diagnosis	ICD-10-CM
F18.29	Inhalant dependence with unspecified inhalant-induced disorder	Diagnosis	ICD-10-CM
F18.90	Inhalant use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F18.920	Inhalant use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F18.921	Inhalant use, unspecified with intoxication with delirium	Diagnosis	ICD-10-CM
F18.929	Inhalant use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F18.94	Inhalant use, unspecified with inhalant-induced mood disorder	Diagnosis	ICD-10-CM
F18.950	Inhalant use, unspecified with inhalant-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F18.951	Inhalant use, unspecified with inhalant-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F18.959	Inhalant use, unspecified with inhalant-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F18.97	Inhalant use, unspecified with inhalant-induced persisting dementia	Diagnosis	ICD-10-CM
F18.980	Inhalant use, unspecified with inhalant-induced anxiety disorder	Diagnosis	ICD-10-CM
F18.988	Inhalant use, unspecified with other inhalant-induced disorder	Diagnosis	ICD-10-CM
F18.99	Inhalant use, unspecified with unspecified inhalant-induced disorder	Diagnosis	ICD-10-CM
F19.10	Other psychoactive substance abuse, uncomplicated	Diagnosis	ICD-10-CM
F19.11	Other psychoactive substance abuse, in remission	Diagnosis	ICD-10-CM
F19.120	Other psychoactive substance abuse with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F19.121	Other psychoactive substance abuse with intoxication delirium	Diagnosis	ICD-10-CM
F19.122	Other psychoactive substance abuse with intoxication with perceptual disturbances	Diagnosis	ICD-10-CM
F19.129	Other psychoactive substance abuse with intoxication, unspecified	Diagnosis	ICD-10-CM
F19.14	Other psychoactive substance abuse with psychoactive substance-induced mood disorder	Diagnosis	ICD-10-CM
F19.150	Other psychoactive substance abuse with psychoactive substance-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F19.151	Other psychoactive substance abuse with psychoactive substance-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F19.159	Other psychoactive substance abuse with psychoactive substance-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F19.16	Other psychoactive substance abuse with psychoactive substance-induced persisting amnesic disorder	Diagnosis	ICD-10-CM
F19.17	Other psychoactive substance abuse with psychoactive substance-induced persisting dementia	Diagnosis	ICD-10-CM
F19.180	Other psychoactive substance abuse with psychoactive substance-induced anxiety disorder	Diagnosis	ICD-10-CM
F19.181	Other psychoactive substance abuse with psychoactive substance-induced sexual dysfunction	Diagnosis	ICD-10-CM
F19.182	Other psychoactive substance abuse with psychoactive substance-induced sleep disorder	Diagnosis	ICD-10-CM
F19.188	Other psychoactive substance abuse with other psychoactive substance-induced disorder	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F19.19	Other psychoactive substance abuse with unspecified psychoactive substance-induced disorder	Diagnosis	ICD-10-CM
F19.21	Other psychoactive substance dependence, in remission	Diagnosis	ICD-10-CM
F19.220	Other psychoactive substance dependence with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F19.221	Other psychoactive substance dependence with intoxication delirium	Diagnosis	ICD-10-CM
F19.222	Other psychoactive substance dependence with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F19.229	Other psychoactive substance dependence with intoxication, unspecified	Diagnosis	ICD-10-CM
F19.230	Other psychoactive substance dependence with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F19.231	Other psychoactive substance dependence with withdrawal delirium	Diagnosis	ICD-10-CM
F19.232	Other psychoactive substance dependence with withdrawal with perceptual disturbance	Diagnosis	ICD-10-CM
F19.239	Other psychoactive substance dependence with withdrawal, unspecified	Diagnosis	ICD-10-CM
F19.24	Other psychoactive substance dependence with psychoactive substance-induced mood disorder	Diagnosis	ICD-10-CM
F19.250	Other psychoactive substance dependence with psychoactive substance-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F19.251	Other psychoactive substance dependence with psychoactive substance-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F19.259	Other psychoactive substance dependence with psychoactive substance-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM
F19.26	Other psychoactive substance dependence with psychoactive substance-induced persisting amnestic disorder	Diagnosis	ICD-10-CM
F19.27	Other psychoactive substance dependence with psychoactive substance-induced persisting dementia	Diagnosis	ICD-10-CM
F19.280	Other psychoactive substance dependence with psychoactive substance-induced anxiety disorder	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F19.281	Other psychoactive substance dependence with psychoactive substance-induced sexual dysfunction	Diagnosis	ICD-10-CM
F19.282	Other psychoactive substance dependence with psychoactive substance-induced sleep disorder	Diagnosis	ICD-10-CM
F19.288	Other psychoactive substance dependence with other psychoactive substance-induced disorder	Diagnosis	ICD-10-CM
F19.29	Other psychoactive substance dependence with unspecified psychoactive substance-induced disorder	Diagnosis	ICD-10-CM
F19.90	Other psychoactive substance use, unspecified, uncomplicated	Diagnosis	ICD-10-CM
F19.920	Other psychoactive substance use, unspecified with intoxication, uncomplicated	Diagnosis	ICD-10-CM
F19.921	Other psychoactive substance use, unspecified with intoxication with delirium	Diagnosis	ICD-10-CM
F19.922	Other psychoactive substance use, unspecified with intoxication with perceptual disturbance	Diagnosis	ICD-10-CM
F19.929	Other psychoactive substance use, unspecified with intoxication, unspecified	Diagnosis	ICD-10-CM
F19.930	Other psychoactive substance use, unspecified with withdrawal, uncomplicated	Diagnosis	ICD-10-CM
F19.931	Other psychoactive substance use, unspecified with withdrawal delirium	Diagnosis	ICD-10-CM
F19.932	Other psychoactive substance use, unspecified with withdrawal with perceptual disturbance	Diagnosis	ICD-10-CM
F19.939	Other psychoactive substance use, unspecified with withdrawal, unspecified	Diagnosis	ICD-10-CM
F19.94	Other psychoactive substance use, unspecified with psychoactive substance-induced mood disorder	Diagnosis	ICD-10-CM
F19.950	Other psychoactive substance use, unspecified with psychoactive substance-induced psychotic disorder with delusions	Diagnosis	ICD-10-CM
F19.951	Other psychoactive substance use, unspecified with psychoactive substance-induced psychotic disorder with hallucinations	Diagnosis	ICD-10-CM
F19.959	Other psychoactive substance use, unspecified with psychoactive substance-induced psychotic disorder, unspecified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F19.96	Other psychoactive substance use, unspecified with psychoactive substance-induced persisting amnesic disorder	Diagnosis	ICD-10-CM
F19.97	Other psychoactive substance use, unspecified with psychoactive substance-induced persisting dementia	Diagnosis	ICD-10-CM
F19.980	Other psychoactive substance use, unspecified with psychoactive substance-induced anxiety disorder	Diagnosis	ICD-10-CM
F19.981	Other psychoactive substance use, unspecified with psychoactive substance-induced sexual dysfunction	Diagnosis	ICD-10-CM
F19.982	Other psychoactive substance use, unspecified with psychoactive substance-induced sleep disorder	Diagnosis	ICD-10-CM
F19.988	Other psychoactive substance use, unspecified with other psychoactive substance-induced disorder	Diagnosis	ICD-10-CM
F19.99	Other psychoactive substance use, unspecified with unspecified psychoactive substance-induced disorder	Diagnosis	ICD-10-CM
F55.0	Abuse of antacids	Diagnosis	ICD-10-CM
F55.1	Abuse of herbal or folk remedies	Diagnosis	ICD-10-CM
F55.2	Abuse of laxatives	Diagnosis	ICD-10-CM
F55.3	Abuse of steroids or hormones	Diagnosis	ICD-10-CM
F55.4	Abuse of vitamins	Diagnosis	ICD-10-CM
F55.8	Abuse of other non-psychoactive substances	Diagnosis	ICD-10-CM
O99.320	Drug use complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O99.321	Drug use complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O99.322	Drug use complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O99.323	Drug use complicating pregnancy, third trimester	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
O99.324	Drug use complicating childbirth	Diagnosis	ICD-10-CM
O99.325	Drug use complicating the puerperium	Diagnosis	ICD-10-CM
<b>HIV</b>			
B20	Human immunodeficiency virus [HIV] disease	Diagnosis	ICD-10-CM
B97.35	Human immunodeficiency virus, type 2 [HIV 2] as the cause of diseases classified elsewhere	Diagnosis	ICD-10-CM
O98.7	Human immunodeficiency virus [HIV] disease complicating pregnancy, childbirth and the puerperium	Diagnosis	ICD-10-CM
O98.71	Human immunodeficiency virus [HIV] disease complicating pregnancy	Diagnosis	ICD-10-CM
O98.711	Human immunodeficiency virus [HIV] disease complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O98.712	Human immunodeficiency virus [HIV] disease complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O98.713	Human immunodeficiency virus [HIV] disease complicating pregnancy, third trimester	Diagnosis	ICD-10-CM
O98.719	Human immunodeficiency virus [HIV] disease complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O98.72	Human immunodeficiency virus [HIV] disease complicating childbirth	Diagnosis	ICD-10-CM
O98.73	Human immunodeficiency virus [HIV] disease complicating the puerperium	Diagnosis	ICD-10-CM
Z21	Asymptomatic human immunodeficiency virus [HIV] infection status	Diagnosis	ICD-10-CM
<b>Hypertension</b>			
I10	Essential (primary) hypertension	Diagnosis	ICD-10-CM
I11	Hypertensive heart disease	Diagnosis	ICD-10-CM
I11.0	Hypertensive heart disease with heart failure	Diagnosis	ICD-10-CM
I11.9	Hypertensive heart disease without heart failure	Diagnosis	ICD-10-CM
I12	Hypertensive chronic kidney disease	Diagnosis	ICD-10-CM
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I12.9	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13	Hypertensive heart and chronic kidney disease	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.1	Hypertensive heart and chronic kidney disease without heart failure	Diagnosis	ICD-10-CM
I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I15	Secondary hypertension	Diagnosis	ICD-10-CM
I15.0	Renovascular hypertension	Diagnosis	ICD-10-CM
I15.1	Hypertension secondary to other renal disorders	Diagnosis	ICD-10-CM
I15.2	Hypertension secondary to endocrine disorders	Diagnosis	ICD-10-CM
I15.8	Other secondary hypertension	Diagnosis	ICD-10-CM
I15.9	Secondary hypertension, unspecified	Diagnosis	ICD-10-CM
I16	Hypertensive crisis	Diagnosis	ICD-10-CM
I16.0	Hypertensive urgency	Diagnosis	ICD-10-CM
I16.1	Hypertensive emergency	Diagnosis	ICD-10-CM
I16.9	Hypertensive crisis, unspecified	Diagnosis	ICD-10-CM
I27.0	Primary pulmonary hypertension	Diagnosis	ICD-10-CM
I27.2	Other secondary pulmonary hypertension	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I27.20	Pulmonary hypertension, unspecified	Diagnosis	ICD-10-CM
I27.21	Secondary pulmonary arterial hypertension	Diagnosis	ICD-10-CM
I27.22	Pulmonary hypertension due to left heart disease	Diagnosis	ICD-10-CM
I27.23	Pulmonary hypertension due to lung diseases and hypoxia	Diagnosis	ICD-10-CM
I27.24	Chronic thromboembolic pulmonary hypertension	Diagnosis	ICD-10-CM
I27.29	Other secondary pulmonary hypertension	Diagnosis	ICD-10-CM
I87.3	Chronic venous hypertension (idiopathic)	Diagnosis	ICD-10-CM
I87.30	Chronic venous hypertension (idiopathic) without complications	Diagnosis	ICD-10-CM
I87.301	Chronic venous hypertension (idiopathic) without complications of right lower extremity	Diagnosis	ICD-10-CM
I87.302	Chronic venous hypertension (idiopathic) without complications of left lower extremity	Diagnosis	ICD-10-CM
I87.303	Chronic venous hypertension (idiopathic) without complications of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.309	Chronic venous hypertension (idiopathic) without complications of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.31	Chronic venous hypertension (idiopathic) with ulcer	Diagnosis	ICD-10-CM
I87.311	Chronic venous hypertension (idiopathic) with ulcer of right lower extremity	Diagnosis	ICD-10-CM
I87.312	Chronic venous hypertension (idiopathic) with ulcer of left lower extremity	Diagnosis	ICD-10-CM
I87.313	Chronic venous hypertension (idiopathic) with ulcer of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.319	Chronic venous hypertension (idiopathic) with ulcer of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.32	Chronic venous hypertension (idiopathic) with inflammation	Diagnosis	ICD-10-CM
I87.321	Chronic venous hypertension (idiopathic) with inflammation of right lower extremity	Diagnosis	ICD-10-CM
I87.322	Chronic venous hypertension (idiopathic) with inflammation of left lower extremity	Diagnosis	ICD-10-CM
I87.323	Chronic venous hypertension (idiopathic) with inflammation of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.329	Chronic venous hypertension (idiopathic) with inflammation of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.33	Chronic venous hypertension (idiopathic) with ulcer and inflammation	Diagnosis	ICD-10-CM
I87.331	Chronic venous hypertension (idiopathic) with ulcer and inflammation of right lower extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I87.332	Chronic venous hypertension (idiopathic) with ulcer and inflammation of left lower extremity	Diagnosis	ICD-10-CM
I87.333	Chronic venous hypertension (idiopathic) with ulcer and inflammation of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.339	Chronic venous hypertension (idiopathic) with ulcer and inflammation of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.39	Chronic venous hypertension (idiopathic) with other complications	Diagnosis	ICD-10-CM
I87.391	Chronic venous hypertension (idiopathic) with other complications of right lower extremity	Diagnosis	ICD-10-CM
I87.392	Chronic venous hypertension (idiopathic) with other complications of left lower extremity	Diagnosis	ICD-10-CM
I87.393	Chronic venous hypertension (idiopathic) with other complications of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.399	Chronic venous hypertension (idiopathic) with other complications of unspecified lower extremity	Diagnosis	ICD-10-CM
I97.3	Postprocedural hypertension	Diagnosis	ICD-10-CM
N26.2	Page kidney	Diagnosis	ICD-10-CM
<b>Interstitial Lung Disease</b>			
J84	Other Interstitial Pulmonary Diseases	Diagnosis	ICD-10-CM
J84.0	Alveolar and Parieto-alveolar conditions	Diagnosis	ICD-10-CM
J84.01	Alveolar Proteinosis	Diagnosis	ICD-10-CM
J84.02	Pulmonary Alveolar Microlithiasis	Diagnosis	ICD-10-CM
J84.03	Idiopathic Pulmonary Hemosiderosis	Diagnosis	ICD-10-CM
J84.09	Other Alveolar and Parieto-Alveolar Conditions	Diagnosis	ICD-10-CM
J84.1	Oth Interstitial Pulmonary Diseases w/ Fibrosis	Diagnosis	ICD-10-CM
J84.10	Pulmonary Fibrosis Unspecified	Diagnosis	ICD-10-CM
J84.11	Idiopathic Interstitial Pneumonia	Diagnosis	ICD-10-CM
J84.111	Idiopathic Interstitial Pneumonia NOS	Diagnosis	ICD-10-CM



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Code	Description	Code Category	Code Type
J84.112	Idiopathic Pulmonary Fibrosis	Diagnosis	ICD-10-CM
J84.113	Idiopathic Non-Specific Interstitial Pneumonitis	Diagnosis	ICD-10-CM
J84.114	Acute Interstitial Pneumonitis	Diagnosis	ICD-10-CM
J84.115	Respiratory Bronchiolitis Interst Lung Disease	Diagnosis	ICD-10-CM
J84.116	Cryptogenic Organizing Pneumonia	Diagnosis	ICD-10-CM
J84.117	Desquamative Interstitial Pneumonia	Diagnosis	ICD-10-CM
J84.17	Other Interst Pul DZ w/Fibrosis DZ Class Elsw	Diagnosis	ICD-10-CM
J84.170	Intrstit Lng Dis w Prgr Fibr Phntyp Dis class E	Diagnosis	ICD-10-CM
J84.178	Oth Interstit Pulmon Dis Fibrosis Dis Class ELSW	Diagnosis	ICD-10-CM
J84.2	Lymphoid Interstitial Pneumonia	Diagnosis	ICD-10-CM
J84.8	Other Specified Interstitial Pulmonary Diseases	Diagnosis	ICD-10-CM
J84.81	Lymphangioleiomyomatosis	Diagnosis	ICD-10-CM
J84.82	Adult Pulmonary Langerhans Cell Histiocytosis	Diagnosis	ICD-10-CM
J84.83	Surfactant Mutations of the Lung	Diagnosis	ICD-10-CM
J84.84	Other Interstitial Lung Diseases of Childhood	Diagnosis	ICD-10-CM
J84.841	Neuroendocrine Cell Hyperplasia of Infancy	Diagnosis	ICD-10-CM
J84.842	Pulmonary Interstitial Glycogenosis	Diagnosis	ICD-10-CM
J84.843	Alveolar Capillary Dysplasia w/ Vein Misalignment	Diagnosis	ICD-10-CM
J84.848	Other Interstitial Lung Diseases of Childhood	Diagnosis	ICD-10-CM
J84.89	Other Specified Interstitial Pulmonary Diseases	Diagnosis	ICD-10-CM
J84.9	Interstitial Pulmonary Disease Unspecified	Diagnosis	ICD-10-CM
<b>Liver Disease</b>			
B18	Chronic viral hepatitis	Diagnosis	ICD-10-CM
B18.0	Chronic viral hepatitis B with delta-agent	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
B18.1	Chronic viral hepatitis B without delta-agent	Diagnosis	ICD-10-CM
B18.2	Chronic viral hepatitis C	Diagnosis	ICD-10-CM
B18.8	Other chronic viral hepatitis	Diagnosis	ICD-10-CM
B18.9	Chronic viral hepatitis, unspecified	Diagnosis	ICD-10-CM
E83.01	Wilson's disease	Diagnosis	ICD-10-CM
E83.110	Hereditary hemochromatosis	Diagnosis	ICD-10-CM
E88.01	Alpha-1-antitrypsin deficiency	Diagnosis	ICD-10-CM
I85	Esophageal varices	Diagnosis	ICD-10-CM
I85.0	Esophageal varices	Diagnosis	ICD-10-CM
I85.00	Esophageal varices without bleeding	Diagnosis	ICD-10-CM
I85.01	Esophageal varices with bleeding	Diagnosis	ICD-10-CM
I85.1	Secondary esophageal varices	Diagnosis	ICD-10-CM
I85.10	Secondary esophageal varices without bleeding	Diagnosis	ICD-10-CM
I85.11	Secondary esophageal varices with bleeding	Diagnosis	ICD-10-CM
I86.4	Gastric varices	Diagnosis	ICD-10-CM
K65.2	Spontaneous bacterial peritonitis	Diagnosis	ICD-10-CM
K70.0	Alcoholic fatty liver	Diagnosis	ICD-10-CM
K70.1	Alcoholic hepatitis	Diagnosis	ICD-10-CM
K70.10	Alcoholic hepatitis without ascites	Diagnosis	ICD-10-CM
K70.11	Alcoholic hepatitis with ascites	Diagnosis	ICD-10-CM
K70.2	Alcoholic fibrosis and sclerosis of liver	Diagnosis	ICD-10-CM
K70.3	Alcoholic cirrhosis of liver	Diagnosis	ICD-10-CM
K70.30	Alcoholic cirrhosis of liver without ascites	Diagnosis	ICD-10-CM
K70.31	Alcoholic cirrhosis of liver with ascites	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
K70.4	Alcoholic hepatic failure	Diagnosis	ICD-10-CM
K70.40	Alcoholic hepatic failure without coma	Diagnosis	ICD-10-CM
K70.41	Alcoholic hepatic failure with coma	Diagnosis	ICD-10-CM
K70.9	Alcoholic liver disease, unspecified	Diagnosis	ICD-10-CM
K71.0	Toxic liver disease with cholestasis	Diagnosis	ICD-10-CM
K71.1	Toxic liver disease with hepatic necrosis	Diagnosis	ICD-10-CM
K71.10	Toxic liver disease with hepatic necrosis, without coma	Diagnosis	ICD-10-CM
K71.11	Toxic liver disease with hepatic necrosis, with coma	Diagnosis	ICD-10-CM
K71.2	Toxic liver disease with acute hepatitis	Diagnosis	ICD-10-CM
K71.3	Toxic liver disease with chronic persistent hepatitis	Diagnosis	ICD-10-CM
K71.4	Toxic liver disease with chronic lobular hepatitis	Diagnosis	ICD-10-CM
K71.5	Toxic liver disease with chronic active hepatitis	Diagnosis	ICD-10-CM
K71.50	Toxic liver disease with chronic active hepatitis without ascites	Diagnosis	ICD-10-CM
K71.51	Toxic liver disease with chronic active hepatitis with ascites	Diagnosis	ICD-10-CM
K71.6	Toxic liver disease with hepatitis, not elsewhere classified	Diagnosis	ICD-10-CM
K71.7	Toxic liver disease with fibrosis and cirrhosis of liver	Diagnosis	ICD-10-CM
K71.8	Toxic liver disease with other disorders of liver	Diagnosis	ICD-10-CM
K71.9	Toxic liver disease, unspecified	Diagnosis	ICD-10-CM
K72.01	Acute and subacute hepatic failure with coma	Diagnosis	ICD-10-CM
K72.1	Chronic hepatic failure	Diagnosis	ICD-10-CM
K72.10	Chronic hepatic failure without coma	Diagnosis	ICD-10-CM
K72.11	Chronic hepatic failure with coma	Diagnosis	ICD-10-CM
K72.9	Hepatic failure, unspecified	Diagnosis	ICD-10-CM
K72.90	Hepatic failure, unspecified without coma	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
K72.91	Hepatic failure, unspecified with coma	Diagnosis	ICD-10-CM
K73	Chronic hepatitis, not elsewhere classified	Diagnosis	ICD-10-CM
K73.0	Chronic persistent hepatitis, not elsewhere classified	Diagnosis	ICD-10-CM
K73.1	Chronic lobular hepatitis, not elsewhere classified	Diagnosis	ICD-10-CM
K73.2	Chronic active hepatitis, not elsewhere classified	Diagnosis	ICD-10-CM
K73.8	Other chronic hepatitis, not elsewhere classified	Diagnosis	ICD-10-CM
K73.9	Chronic hepatitis, unspecified	Diagnosis	ICD-10-CM
K74	Fibrosis and cirrhosis of liver	Diagnosis	ICD-10-CM
K74.0	Hepatic fibrosis	Diagnosis	ICD-10-CM
K74.1	Hepatic sclerosis	Diagnosis	ICD-10-CM
K74.2	Hepatic fibrosis with hepatic sclerosis	Diagnosis	ICD-10-CM
K74.3	Primary biliary cirrhosis	Diagnosis	ICD-10-CM
K74.4	Secondary biliary cirrhosis	Diagnosis	ICD-10-CM
K74.5	Biliary cirrhosis, unspecified	Diagnosis	ICD-10-CM
K74.6	Other and unspecified cirrhosis of liver	Diagnosis	ICD-10-CM
K74.60	Unspecified cirrhosis of liver	Diagnosis	ICD-10-CM
K74.69	Other cirrhosis of liver	Diagnosis	ICD-10-CM
K75.0	Abscess of liver	Diagnosis	ICD-10-CM
K75.1	Phlebitis of portal vein	Diagnosis	ICD-10-CM
K75.2	Nonspecific reactive hepatitis	Diagnosis	ICD-10-CM
K75.3	Granulomatous hepatitis, not elsewhere classified	Diagnosis	ICD-10-CM
K75.4	Autoimmune hepatitis	Diagnosis	ICD-10-CM
K75.8	Other specified inflammatory liver diseases	Diagnosis	ICD-10-CM
K75.81	Nonalcoholic steatohepatitis (NASH)	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
K75.89	Other specified inflammatory liver diseases	Diagnosis	ICD-10-CM
K75.9	Inflammatory liver disease, unspecified	Diagnosis	ICD-10-CM
K76.0	Fatty (change of) liver, not elsewhere classified	Diagnosis	ICD-10-CM
K76.1	Chronic passive congestion of liver	Diagnosis	ICD-10-CM
K76.2	Central hemorrhagic necrosis of liver	Diagnosis	ICD-10-CM
K76.3	Infarction of liver	Diagnosis	ICD-10-CM
K76.4	Peliosis hepatis	Diagnosis	ICD-10-CM
K76.5	Hepatic veno-occlusive disease	Diagnosis	ICD-10-CM
K76.6	Portal hypertension	Diagnosis	ICD-10-CM
K76.7	Hepatorenal syndrome	Diagnosis	ICD-10-CM
K76.8	Other specified diseases of liver	Diagnosis	ICD-10-CM
K76.81	Hepatopulmonary syndrome	Diagnosis	ICD-10-CM
K76.89	Other specified diseases of liver	Diagnosis	ICD-10-CM
K76.9	Liver disease, unspecified	Diagnosis	ICD-10-CM
K83.01	Primary sclerosing cholangitis	Diagnosis	ICD-10-CM
K91.83	Postprocedural hepatorenal syndrome	Diagnosis	ICD-10-CM
Z94.4	Liver transplant status	Diagnosis	ICD-10-CM
<b>Neurologic Conditions</b>			
D32	Benign neoplasm of meninges	Diagnosis	ICD-10-CM
D32.0	Benign neoplasm of cerebral meninges	Diagnosis	ICD-10-CM
D32.1	Benign neoplasm of spinal meninges	Diagnosis	ICD-10-CM
D32.9	Benign neoplasm of meninges, unspecified	Diagnosis	ICD-10-CM
D33.3	Benign neoplasm of cranial nerves	Diagnosis	ICD-10-CM
D36.11	Benign neoplasm of peripheral nerves and autonomic nervous system of face, head, and neck	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F01	Vascular dementia	Diagnosis	ICD-10-CM
F01.5	Vascular dementia	Diagnosis	ICD-10-CM
F01.50	Vascular dementia without behavioral disturbance	Diagnosis	ICD-10-CM
F01.51	Vascular dementia with behavioral disturbance	Diagnosis	ICD-10-CM
F02	Dementia in other diseases classified elsewhere	Diagnosis	ICD-10-CM
F02.8	Dementia in other diseases classified elsewhere	Diagnosis	ICD-10-CM
F02.80	Dementia in other diseases classified elsewhere without behavioral disturbance	Diagnosis	ICD-10-CM
F02.81	Dementia in other diseases classified elsewhere with behavioral disturbance	Diagnosis	ICD-10-CM
F03	Unspecified dementia	Diagnosis	ICD-10-CM
F03.9	Unspecified dementia	Diagnosis	ICD-10-CM
F03.90	Unspecified dementia without behavioral disturbance	Diagnosis	ICD-10-CM
F03.91	Unspecified dementia with behavioral disturbance	Diagnosis	ICD-10-CM
F10.27	Alcohol dependence with alcohol-induced persisting dementia	Diagnosis	ICD-10-CM
F10.97	Alcohol use, unspecified with alcohol-induced persisting dementia	Diagnosis	ICD-10-CM
F13.27	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced persisting dementia	Diagnosis	ICD-10-CM
F13.97	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced persisting dementia	Diagnosis	ICD-10-CM
F18.17	Inhalant abuse with inhalant-induced dementia	Diagnosis	ICD-10-CM
F18.27	Inhalant dependence with inhalant-induced dementia	Diagnosis	ICD-10-CM
F18.97	Inhalant use, unspecified with inhalant-induced persisting dementia	Diagnosis	ICD-10-CM
F19.17	Other psychoactive substance abuse with psychoactive substance-induced persisting dementia	Diagnosis	ICD-10-CM
F19.27	Other psychoactive substance dependence with psychoactive substance-induced persisting dementia	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
F19.97	Other psychoactive substance use, unspecified with psychoactive substance-induced persisting dementia	Diagnosis	ICD-10-CM
G10	Huntington's disease	Diagnosis	ICD-10-CM
G11.11	Friedreich ataxia	Diagnosis	ICD-10-CM
G12	Spinal muscular atrophy and related syndromes	Diagnosis	ICD-10-CM
G12.0	Infantile spinal muscular atrophy, type I [Werdnig-Hoffman]	Diagnosis	ICD-10-CM
G12.1	Other inherited spinal muscular atrophy	Diagnosis	ICD-10-CM
G12.2	Motor neuron disease	Diagnosis	ICD-10-CM
G12.20	Motor neuron disease, unspecified	Diagnosis	ICD-10-CM
G12.21	Amyotrophic lateral sclerosis	Diagnosis	ICD-10-CM
G12.22	Progressive bulbar palsy	Diagnosis	ICD-10-CM
G12.23	Primary lateral sclerosis	Diagnosis	ICD-10-CM
G12.24	Familial motor neuron disease	Diagnosis	ICD-10-CM
G12.25	Progressive spinal muscle atrophy	Diagnosis	ICD-10-CM
G12.29	Other motor neuron disease	Diagnosis	ICD-10-CM
G12.8	Other spinal muscular atrophies and related syndromes	Diagnosis	ICD-10-CM
G12.9	Spinal muscular atrophy, unspecified	Diagnosis	ICD-10-CM
G20	Parkinson's disease	Diagnosis	ICD-10-CM
G21	Secondary parkinsonism	Diagnosis	ICD-10-CM
G21.1	Other drug-induced secondary parkinsonism	Diagnosis	ICD-10-CM
G21.11	Neuroleptic induced parkinsonism	Diagnosis	ICD-10-CM
G21.19	Other drug induced secondary parkinsonism	Diagnosis	ICD-10-CM
G21.2	Secondary parkinsonism due to other external agents	Diagnosis	ICD-10-CM
G21.3	Postencephalitic parkinsonism	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G21.4	Vascular parkinsonism	Diagnosis	ICD-10-CM
G21.8	Other secondary parkinsonism	Diagnosis	ICD-10-CM
G21.9	Secondary parkinsonism, unspecified	Diagnosis	ICD-10-CM
G23.1	Progressive supranuclear ophthalmoplegia [Steele-Richardson-Olszewski]	Diagnosis	ICD-10-CM
G30	Alzheimer's disease	Diagnosis	ICD-10-CM
G30.0	Alzheimer's disease with early onset	Diagnosis	ICD-10-CM
G30.1	Alzheimer's disease with late onset	Diagnosis	ICD-10-CM
G30.8	Other Alzheimer's disease	Diagnosis	ICD-10-CM
G30.9	Alzheimer's disease, unspecified	Diagnosis	ICD-10-CM
G31.0	Frontotemporal dementia	Diagnosis	ICD-10-CM
G31.09	Other frontotemporal dementia	Diagnosis	ICD-10-CM
G31.83	Dementia with Lewy bodies	Diagnosis	ICD-10-CM
G32.0	Subacute combined degeneration of spinal cord in diseases classified elsewhere	Diagnosis	ICD-10-CM
G35	Multiple sclerosis	Diagnosis	ICD-10-CM
G40	Epilepsy and recurrent seizures	Diagnosis	ICD-10-CM
G40.0	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset	Diagnosis	ICD-10-CM
G40.00	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, not intractable	Diagnosis	ICD-10-CM
G40.001	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.009	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, not intractable, without status epilepticus	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G40.01	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable	Diagnosis	ICD-10-CM
G40.011	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.019	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.1	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures	Diagnosis	ICD-10-CM
G40.10	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, not intractable	Diagnosis	ICD-10-CM
G40.101	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.109	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, not intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.11	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable	Diagnosis	ICD-10-CM
G40.111	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.119	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.2	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures	Diagnosis	ICD-10-CM
G40.20	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, not intractable	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G40.201	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.209	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, not intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.21	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable	Diagnosis	ICD-10-CM
G40.211	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.219	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.3	Generalized idiopathic epilepsy and epileptic syndromes	Diagnosis	ICD-10-CM
G40.30	Generalized idiopathic epilepsy and epileptic syndromes, not intractable	Diagnosis	ICD-10-CM
G40.301	Generalized idiopathic epilepsy and epileptic syndromes, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.309	Generalized idiopathic epilepsy and epileptic syndromes, not intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.31	Generalized idiopathic epilepsy and epileptic syndromes, intractable	Diagnosis	ICD-10-CM
G40.311	Generalized idiopathic epilepsy and epileptic syndromes, intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.319	Generalized idiopathic epilepsy and epileptic syndromes, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.4	Other generalized epilepsy and epileptic syndromes	Diagnosis	ICD-10-CM
G40.40	Other generalized epilepsy and epileptic syndromes, not intractable	Diagnosis	ICD-10-CM
G40.401	Other generalized epilepsy and epileptic syndromes, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.409	Other generalized epilepsy and epileptic syndromes, not intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.41	Other generalized epilepsy and epileptic syndromes, intractable	Diagnosis	ICD-10-CM
G40.411	Other generalized epilepsy and epileptic syndromes, intractable, with status epilepticus	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G40.419	Other generalized epilepsy and epileptic syndromes, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.8	Other epilepsy and recurrent seizures	Diagnosis	ICD-10-CM
G40.80	Other epilepsy	Diagnosis	ICD-10-CM
G40.801	Other epilepsy, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.802	Other epilepsy, not intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.803	Other epilepsy, intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.804	Other epilepsy, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.9	Epilepsy, unspecified	Diagnosis	ICD-10-CM
G40.90	Epilepsy, unspecified, not intractable	Diagnosis	ICD-10-CM
G40.901	Epilepsy, unspecified, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.909	Epilepsy, unspecified, not intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.91	Epilepsy, unspecified, intractable	Diagnosis	ICD-10-CM
G40.911	Epilepsy, unspecified, intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.919	Epilepsy, unspecified, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.B	Juvenile myoclonic epilepsy [impulsive petit mal]	Diagnosis	ICD-10-CM
G40.B0	Juvenile myoclonic epilepsy, not intractable	Diagnosis	ICD-10-CM
G40.B01	Juvenile myoclonic epilepsy, not intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.B09	Juvenile myoclonic epilepsy, not intractable, without status epilepticus	Diagnosis	ICD-10-CM
G40.B1	Juvenile myoclonic epilepsy, intractable	Diagnosis	ICD-10-CM
G40.B11	Juvenile myoclonic epilepsy, intractable, with status epilepticus	Diagnosis	ICD-10-CM
G40.B19	Juvenile myoclonic epilepsy, intractable, without status epilepticus	Diagnosis	ICD-10-CM
G45	Transient cerebral ischemic attacks and related syndromes	Diagnosis	ICD-10-CM
G45.0	Vertebro-basilar artery syndrome	Diagnosis	ICD-10-CM
G45.1	Carotid artery syndrome (hemispheric)	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G45.2	Multiple and bilateral precerebral artery syndromes	Diagnosis	ICD-10-CM
G45.3	Amaurosis fugax	Diagnosis	ICD-10-CM
G45.4	Transient global amnesia	Diagnosis	ICD-10-CM
G45.8	Other transient cerebral ischemic attacks and related syndromes	Diagnosis	ICD-10-CM
G45.9	Transient cerebral ischemic attack, unspecified	Diagnosis	ICD-10-CM
G60.0	Hereditary motor and sensory neuropathy	Diagnosis	ICD-10-CM
G61.0	Guillain-Barre syndrome	Diagnosis	ICD-10-CM
G64	Other disorders of peripheral nervous system	Diagnosis	ICD-10-CM
G65.0	Sequelae of Guillain-Barre syndrome	Diagnosis	ICD-10-CM
G70	Myasthenia gravis and other myoneural disorders	Diagnosis	ICD-10-CM
G70.0	Myasthenia gravis	Diagnosis	ICD-10-CM
G70.00	Myasthenia gravis without (acute) exacerbation	Diagnosis	ICD-10-CM
G70.01	Myasthenia gravis with (acute) exacerbation	Diagnosis	ICD-10-CM
G70.1	Toxic myoneural disorders	Diagnosis	ICD-10-CM
G70.2	Congenital and developmental myasthenia	Diagnosis	ICD-10-CM
G70.8	Other specified myoneural disorders	Diagnosis	ICD-10-CM
G70.80	Lambert-Eaton syndrome, unspecified	Diagnosis	ICD-10-CM
G70.81	Lambert-Eaton syndrome in disease classified elsewhere	Diagnosis	ICD-10-CM
G70.89	Other specified myoneural disorders	Diagnosis	ICD-10-CM
G70.9	Myoneural disorder, unspecified	Diagnosis	ICD-10-CM
G71.0	Muscular dystrophy	Diagnosis	ICD-10-CM
G71.00	Muscular dystrophy, unspecified	Diagnosis	ICD-10-CM
G71.01	Duchenne or Becker muscular dystrophy	Diagnosis	ICD-10-CM
G71.02	Facioscapulohumeral muscular dystrophy	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G71.09	Other specified muscular dystrophies	Diagnosis	ICD-10-CM
G71.11	Myotonic muscular dystrophy	Diagnosis	ICD-10-CM
G71.12	Myotonia congenita	Diagnosis	ICD-10-CM
G71.19	Other specified myotonic disorders	Diagnosis	ICD-10-CM
G71.2	Congenital myopathies	Diagnosis	ICD-10-CM
G72.4	Inflammatory and immune myopathies, not elsewhere classified	Diagnosis	ICD-10-CM
G72.41	Inclusion body myositis [IBM]	Diagnosis	ICD-10-CM
G72.49	Other inflammatory and immune myopathies, not elsewhere classified	Diagnosis	ICD-10-CM
G72.9	Myopathy, unspecified	Diagnosis	ICD-10-CM
G73.1	Lambert-Eaton syndrome in neoplastic disease	Diagnosis	ICD-10-CM
G80	Cerebral palsy	Diagnosis	ICD-10-CM
G80.0	Spastic quadriplegic cerebral palsy	Diagnosis	ICD-10-CM
G80.1	Spastic diplegic cerebral palsy	Diagnosis	ICD-10-CM
G80.2	Spastic hemiplegic cerebral palsy	Diagnosis	ICD-10-CM
G80.3	Athetoid cerebral palsy	Diagnosis	ICD-10-CM
G80.4	Ataxic cerebral palsy	Diagnosis	ICD-10-CM
G80.8	Other cerebral palsy	Diagnosis	ICD-10-CM
G80.9	Cerebral palsy, unspecified	Diagnosis	ICD-10-CM
G91	Hydrocephalus	Diagnosis	ICD-10-CM
G91.0	Communicating hydrocephalus	Diagnosis	ICD-10-CM
G91.1	Obstructive hydrocephalus	Diagnosis	ICD-10-CM
G91.2	(Idiopathic) normal pressure hydrocephalus	Diagnosis	ICD-10-CM
G91.3	Post-traumatic hydrocephalus, unspecified	Diagnosis	ICD-10-CM
G91.4	Hydrocephalus in diseases classified elsewhere	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G91.8	Other hydrocephalus	Diagnosis	ICD-10-CM
G91.9	Hydrocephalus, unspecified	Diagnosis	ICD-10-CM
G95.0	Syringomyelia and syringobulbia	Diagnosis	ICD-10-CM
H93.3	Disorders of acoustic nerve	Diagnosis	ICD-10-CM
I60.7	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery	Diagnosis	ICD-10-CM
I67.1	Cerebral aneurysm, nonruptured	Diagnosis	ICD-10-CM
M33	Dermatopolymyositis	Diagnosis	ICD-10-CM
M33.0	Juvenile dermatomyositis	Diagnosis	ICD-10-CM
M33.00	Juvenile dermatomyositis, organ involvement unspecified	Diagnosis	ICD-10-CM
M33.01	Juvenile dermatomyositis with respiratory involvement	Diagnosis	ICD-10-CM
M33.02	Juvenile dermatomyositis with myopathy	Diagnosis	ICD-10-CM
M33.03	Juvenile dermatomyositis without myopathy	Diagnosis	ICD-10-CM
M33.09	Juvenile dermatomyositis with other organ involvement	Diagnosis	ICD-10-CM
M33.1	Other dermatomyositis	Diagnosis	ICD-10-CM
M33.10	Other dermatomyositis, organ involvement unspecified	Diagnosis	ICD-10-CM
M33.11	Other dermatomyositis with respiratory involvement	Diagnosis	ICD-10-CM
M33.12	Other dermatomyositis with myopathy	Diagnosis	ICD-10-CM
M33.13	Other dermatomyositis without myopathy	Diagnosis	ICD-10-CM
M33.19	Other dermatomyositis with other organ involvement	Diagnosis	ICD-10-CM
M33.2	Polymyositis	Diagnosis	ICD-10-CM
M33.20	Polymyositis, organ involvement unspecified	Diagnosis	ICD-10-CM
M33.21	Polymyositis with respiratory involvement	Diagnosis	ICD-10-CM
M33.22	Polymyositis with myopathy	Diagnosis	ICD-10-CM
M33.29	Polymyositis with other organ involvement	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
M33.9	Dermatopolymyositis, unspecified	Diagnosis	ICD-10-CM
M33.90	Dermatopolymyositis, unspecified, organ involvement unspecified	Diagnosis	ICD-10-CM
M33.91	Dermatopolymyositis, unspecified with respiratory involvement	Diagnosis	ICD-10-CM
M33.92	Dermatopolymyositis, unspecified with myopathy	Diagnosis	ICD-10-CM
M33.93	Dermatopolymyositis, unspecified without myopathy	Diagnosis	ICD-10-CM
M33.99	Dermatopolymyositis, unspecified with other organ involvement	Diagnosis	ICD-10-CM
M48.0	Spinal stenosis	Diagnosis	ICD-10-CM
M48.00	Spinal stenosis, site unspecified	Diagnosis	ICD-10-CM
M48.01	Spinal stenosis, occipito-atlanto-axial region	Diagnosis	ICD-10-CM
M48.02	Spinal stenosis, cervical region	Diagnosis	ICD-10-CM
M48.03	Spinal stenosis, cervicothoracic region	Diagnosis	ICD-10-CM
M48.04	Spinal stenosis, thoracic region	Diagnosis	ICD-10-CM
M48.05	Spinal stenosis, thoracolumbar region	Diagnosis	ICD-10-CM
M48.06	Spinal stenosis, lumbar region	Diagnosis	ICD-10-CM
M48.061	Spinal stenosis, lumbar region without neurogenic claudication	Diagnosis	ICD-10-CM
M48.062	Spinal stenosis, lumbar region with neurogenic claudication	Diagnosis	ICD-10-CM
M48.07	Spinal stenosis, lumbosacral region	Diagnosis	ICD-10-CM
M48.08	Spinal stenosis, sacral and sacrococcygeal region	Diagnosis	ICD-10-CM
Q28	Other congenital malformations of circulatory system	Diagnosis	ICD-10-CM
Q85.0	Neurofibromatosis (nonmalignant)	Diagnosis	ICD-10-CM
Q85.00	Neurofibromatosis, unspecified	Diagnosis	ICD-10-CM
Q85.01	Neurofibromatosis, type 1	Diagnosis	ICD-10-CM
Q85.02	Neurofibromatosis, type 2	Diagnosis	ICD-10-CM
Q85.09	Other neurofibromatosis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.2	Diffuse traumatic brain injury	Diagnosis	ICD-10-CM
S06.2X	Diffuse traumatic brain injury	Diagnosis	ICD-10-CM
S06.2X0	Diffuse traumatic brain injury without loss of consciousness	Diagnosis	ICD-10-CM
S06.2X0A	Diffuse traumatic brain injury without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.2X0D	Diffuse traumatic brain injury without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X0S	Diffuse traumatic brain injury without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.2X1	Diffuse traumatic brain injury with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.2X1A	Diffuse traumatic brain injury with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.2X1D	Diffuse traumatic brain injury with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X1S	Diffuse traumatic brain injury with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.2X2	Diffuse traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.2X2A	Diffuse traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.2X2D	Diffuse traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X2S	Diffuse traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.2X3	Diffuse traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes	Diagnosis	ICD-10-CM
S06.2X3A	Diffuse traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.2X3D	Diffuse traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X3S	Diffuse traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.2X4	Diffuse traumatic brain injury with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.2X4A	Diffuse traumatic brain injury with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.2X4D	Diffuse traumatic brain injury with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X4S	Diffuse traumatic brain injury with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.2X5	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious levels	Diagnosis	ICD-10-CM
S06.2X5A	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious levels, initial encounter	Diagnosis	ICD-10-CM
S06.2X5D	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious levels, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X5S	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious levels, sequela	Diagnosis	ICD-10-CM
S06.2X6	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.2X6A	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.2X6D	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X6S	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.2X7	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.2X7A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.2X7D	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X7S	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.2X8	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.2X8A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.2X8D	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X8S	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.2X9	Diffuse traumatic brain injury with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.2X9A	Diffuse traumatic brain injury with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.2X9D	Diffuse traumatic brain injury with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.2X9S	Diffuse traumatic brain injury with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.3	Focal traumatic brain injury	Diagnosis	ICD-10-CM
S06.30	Unspecified focal traumatic brain injury	Diagnosis	ICD-10-CM
S06.300	Unspecified focal traumatic brain injury without loss of consciousness	Diagnosis	ICD-10-CM
S06.300A	Unspecified focal traumatic brain injury without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.300D	Unspecified focal traumatic brain injury without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.300S	Unspecified focal traumatic brain injury without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.301	Unspecified focal traumatic brain injury with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.301A	Unspecified focal traumatic brain injury with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.301D	Unspecified focal traumatic brain injury with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.301S	Unspecified focal traumatic brain injury with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.302	Unspecified focal traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.302A	Unspecified focal traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.302D	Unspecified focal traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.302S	Unspecified focal traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.303	Unspecified focal traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes	Diagnosis	ICD-10-CM
S06.303A	Unspecified focal traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.303D	Unspecified focal traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.303S	Unspecified focal traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.304	Unspecified focal traumatic brain injury with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.304A	Unspecified focal traumatic brain injury with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.304D	Unspecified focal traumatic brain injury with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.304S	Unspecified focal traumatic brain injury with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.305	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.305A	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.305D	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.305S	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.306	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.306A	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.306D	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.306S	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.307	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.307A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.307D	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.307S	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.308	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.308A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.308D	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.308S	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.309	Unspecified focal traumatic brain injury with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.309A	Unspecified focal traumatic brain injury with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.309D	Unspecified focal traumatic brain injury with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.309S	Unspecified focal traumatic brain injury with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.31	Contusion and laceration of right cerebrum	Diagnosis	ICD-10-CM
S06.310	Contusion and laceration of right cerebrum without loss of consciousness	Diagnosis	ICD-10-CM
S06.310A	Contusion and laceration of right cerebrum without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.310D	Contusion and laceration of right cerebrum without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.310S	Contusion and laceration of right cerebrum without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.311	Contusion and laceration of right cerebrum with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.311A	Contusion and laceration of right cerebrum with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.311D	Contusion and laceration of right cerebrum with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.311S	Contusion and laceration of right cerebrum with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.312	Contusion and laceration of right cerebrum with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.312A	Contusion and laceration of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.312D	Contusion and laceration of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.312S	Contusion and laceration of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.313	Contusion and laceration of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes	Diagnosis	ICD-10-CM
S06.313A	Contusion and laceration of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.313D	Contusion and laceration of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.313S	Contusion and laceration of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.314	Contusion and laceration of right cerebrum with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.314A	Contusion and laceration of right cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.314D	Contusion and laceration of right cerebrum with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.314S	Contusion and laceration of right cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.315	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.315A	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.315D	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.315S	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.316	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.316A	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.316D	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.316S	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.317	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.317A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.317D	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.317S	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.318	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.318A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.318D	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.318S	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.319	Contusion and laceration of right cerebrum with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.319A	Contusion and laceration of right cerebrum with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.319D	Contusion and laceration of right cerebrum with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.319S	Contusion and laceration of right cerebrum with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.32	Contusion and laceration of left cerebrum	Diagnosis	ICD-10-CM
S06.320	Contusion and laceration of left cerebrum without loss of consciousness	Diagnosis	ICD-10-CM
S06.320A	Contusion and laceration of left cerebrum without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.320D	Contusion and laceration of left cerebrum without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.320S	Contusion and laceration of left cerebrum without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.321	Contusion and laceration of left cerebrum with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.321A	Contusion and laceration of left cerebrum with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.321D	Contusion and laceration of left cerebrum with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.321S	Contusion and laceration of left cerebrum with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.322	Contusion and laceration of left cerebrum with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.322A	Contusion and laceration of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.322D	Contusion and laceration of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.322S	Contusion and laceration of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.323	Contusion and laceration of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.323A	Contusion and laceration of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.323D	Contusion and laceration of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.323S	Contusion and laceration of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.324	Contusion and laceration of left cerebrum with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.324A	Contusion and laceration of left cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.324D	Contusion and laceration of left cerebrum with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.324S	Contusion and laceration of left cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.325	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.325A	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.325D	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.325S	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.326	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.326A	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.326D	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.326S	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.327	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.327A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.327D	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.327S	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.328	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.328A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.328D	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.328S	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.329	Contusion and laceration of left cerebrum with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.329A	Contusion and laceration of left cerebrum with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.329D	Contusion and laceration of left cerebrum with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.329S	Contusion and laceration of left cerebrum with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.33	Contusion and laceration of cerebrum, unspecified	Diagnosis	ICD-10-CM
S06.330	Contusion and laceration of cerebrum, unspecified, without loss of consciousness	Diagnosis	ICD-10-CM
S06.330A	Contusion and laceration of cerebrum, unspecified, without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.330D	Contusion and laceration of cerebrum, unspecified, without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.330S	Contusion and laceration of cerebrum, unspecified, without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.331	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.331A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.331D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.331S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.332	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.332A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.332D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.332S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.333	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes	Diagnosis	ICD-10-CM
S06.333A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.333D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.333S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.334	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.334A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.334D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.334S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.335	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.335A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.335D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.335S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.336	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.336A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.336D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.336S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.337	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.337A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.337D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.337S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.338	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.338A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.338D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.338S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.339	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.339A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.339D	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.339S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.34	Traumatic hemorrhage of right cerebrum	Diagnosis	ICD-10-CM
S06.340	Traumatic hemorrhage of right cerebrum without loss of consciousness	Diagnosis	ICD-10-CM
S06.340A	Traumatic hemorrhage of right cerebrum without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.340D	Traumatic hemorrhage of right cerebrum without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.340S	Traumatic hemorrhage of right cerebrum without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.341	Traumatic hemorrhage of right cerebrum with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.341A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.341D	Traumatic hemorrhage of right cerebrum with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.341S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.342	Traumatic hemorrhage of right cerebrum with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.342A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.342D	Traumatic hemorrhage of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.342S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.343	Traumatic hemorrhage of right cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes	Diagnosis	ICD-10-CM
S06.343A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.343D	Traumatic hemorrhage of right cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.343S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.344	Traumatic hemorrhage of right cerebrum with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.344A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.344D	Traumatic hemorrhage of right cerebrum with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.344S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.345	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.345A	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.345D	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.345S	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.346	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.346A	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.346D	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.346S	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.347	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.347A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.347D	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.347S	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.348	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.348A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.348D	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.348S	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.349	Traumatic hemorrhage of right cerebrum with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.349A	Traumatic hemorrhage of right cerebrum with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.349D	Traumatic hemorrhage of right cerebrum with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.349S	Traumatic hemorrhage of right cerebrum with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.35	Traumatic hemorrhage of left cerebrum	Diagnosis	ICD-10-CM
S06.350	Traumatic hemorrhage of left cerebrum without loss of consciousness	Diagnosis	ICD-10-CM
S06.350A	Traumatic hemorrhage of left cerebrum without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.350D	Traumatic hemorrhage of left cerebrum without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.350S	Traumatic hemorrhage of left cerebrum without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.351	Traumatic hemorrhage of left cerebrum with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.351A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.351D	Traumatic hemorrhage of left cerebrum with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.351S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.352	Traumatic hemorrhage of left cerebrum with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.352A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.352D	Traumatic hemorrhage of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.352S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.353	Traumatic hemorrhage of left cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes	Diagnosis	ICD-10-CM
S06.353A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.353D	Traumatic hemorrhage of left cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.353S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.354	Traumatic hemorrhage of left cerebrum with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.354A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.354D	Traumatic hemorrhage of left cerebrum with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.354S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.355	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.355A	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.355D	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.355S	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.356	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.356A	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.356D	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.356S	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.357	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.357A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.357D	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.357S	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.358	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.358A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.358D	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.358S	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.359	Traumatic hemorrhage of left cerebrum with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.359A	Traumatic hemorrhage of left cerebrum with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.359D	Traumatic hemorrhage of left cerebrum with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.359S	Traumatic hemorrhage of left cerebrum with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.36	Traumatic hemorrhage of cerebrum, unspecified	Diagnosis	ICD-10-CM
S06.360	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness	Diagnosis	ICD-10-CM
S06.360A	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.360D	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.360S	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.361	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.361A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.361D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.361S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.362	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.362A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.362D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.362S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.363	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hours to 5 hours 59 minutes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.363A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hours to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.363D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hours to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.363S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hours to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.364	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.364A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.364D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.364S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.365	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.365A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.365D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.365S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.366	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.366A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.366D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.366S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.367	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.367A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.367D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.367S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.368	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.368A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.368D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.368S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.369	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.369A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.369D	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.369S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.37	Contusion, laceration, and hemorrhage of cerebellum	Diagnosis	ICD-10-CM
S06.370	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness	Diagnosis	ICD-10-CM
S06.370A	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.370D	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.370S	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.371	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.371A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.371D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.371S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.372	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.372A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.372D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.372S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.373	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.373A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.373D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.373S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.374	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.374A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.374D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.374S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.375	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.375A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.375D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.375S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.376	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.376A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.376D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.376S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.377	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.377A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.377D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.377S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.378	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.378A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.378D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.378S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.379	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.379A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.379D	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.379S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
S06.38	Contusion, laceration, and hemorrhage of brainstem	Diagnosis	ICD-10-CM
S06.380	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness	Diagnosis	ICD-10-CM
S06.380A	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.380D	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.380S	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness, sequela	Diagnosis	ICD-10-CM
S06.381	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less	Diagnosis	ICD-10-CM
S06.381A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less, initial encounter	Diagnosis	ICD-10-CM
S06.381D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less, subsequent encounter	Diagnosis	ICD-10-CM
S06.381S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less, sequela	Diagnosis	ICD-10-CM
S06.382	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes	Diagnosis	ICD-10-CM
S06.382A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.382D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.382S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes, sequela	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.383	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes	Diagnosis	ICD-10-CM
S06.383A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	Diagnosis	ICD-10-CM
S06.383D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes, subsequent encounter	Diagnosis	ICD-10-CM
S06.383S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	Diagnosis	ICD-10-CM
S06.384	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours	Diagnosis	ICD-10-CM
S06.384A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours, initial encounter	Diagnosis	ICD-10-CM
S06.384D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours, subsequent encounter	Diagnosis	ICD-10-CM
S06.384S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours, sequela	Diagnosis	ICD-10-CM
S06.385	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level	Diagnosis	ICD-10-CM
S06.385A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	Diagnosis	ICD-10-CM
S06.385D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level, subsequent encounter	Diagnosis	ICD-10-CM
S06.385S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	Diagnosis	ICD-10-CM
S06.386	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving	Diagnosis	ICD-10-CM
S06.386A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	Diagnosis	ICD-10-CM
S06.386D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, subsequent encounter	Diagnosis	ICD-10-CM
S06.386S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	Diagnosis	ICD-10-CM
S06.387	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.387A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S06.387D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.387S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.388	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness	Diagnosis	ICD-10-CM
S06.388A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	Diagnosis	ICD-10-CM
S06.388D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, subsequent encounter	Diagnosis	ICD-10-CM
S06.388S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	Diagnosis	ICD-10-CM
S06.389	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration	Diagnosis	ICD-10-CM
S06.389A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration, initial encounter	Diagnosis	ICD-10-CM
S06.389D	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration, subsequent encounter	Diagnosis	ICD-10-CM
S06.389S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration, sequela	Diagnosis	ICD-10-CM
Z13.850	Encounter for screening for traumatic brain injury	Diagnosis	ICD-10-CM
Z82.0	Family history of epilepsy and other diseases of the nervous system	Diagnosis	ICD-10-CM
Z87.820	Personal history of traumatic brain injury	Diagnosis	ICD-10-CM
<b>Obesity</b>			
0D16079	Bypass Stomach to Duodenum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1607A	Bypass Stomach to Jejunum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1607B	Bypass Stomach to Ileum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1607L	Bypass Stomach to Transverse Colon with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160J9	Bypass Stomach to Duodenum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D160JA	Bypass Stomach to Jejunum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D160JB	Bypass Stomach to Ileum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D160JL	Bypass Stomach to Transverse Colon with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D160K9	Bypass Stomach to Duodenum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160KA	Bypass Stomach to Jejunum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0D160KB	Bypass Stomach to Ileum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160KL	Bypass Stomach to Transverse Colon with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D160Z9	Bypass Stomach to Duodenum, Open Approach	Procedure	ICD-10-PCS
0D160ZA	Bypass Stomach to Jejunum, Open Approach	Procedure	ICD-10-PCS
0D160ZB	Bypass Stomach to Ileum, Open Approach	Procedure	ICD-10-PCS
0D160ZL	Bypass Stomach to Transverse Colon, Open Approach	Procedure	ICD-10-PCS
0D16479	Bypass Stomach to Duodenum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1647A	Bypass Stomach to Jejunum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1647B	Bypass Stomach to Ileum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1647L	Bypass Stomach to Transverse Colon with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164J9	Bypass Stomach to Duodenum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164JA	Bypass Stomach to Jejunum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164JB	Bypass Stomach to Ileum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164JL	Bypass Stomach to Transverse Colon with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164K9	Bypass Stomach to Duodenum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164KA	Bypass Stomach to Jejunum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164KB	Bypass Stomach to Ileum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164KL	Bypass Stomach to Transverse Colon with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164Z9	Bypass Stomach to Duodenum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164ZA	Bypass Stomach to Jejunum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D164ZB	Bypass Stomach to Ileum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0D164ZL	Bypass Stomach to Transverse Colon, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D16879	Bypass Stomach to Duodenum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1687A	Bypass Stomach to Jejunum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1687B	Bypass Stomach to Ileum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1687L	Bypass Stomach to Transverse Colon with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168J9	Bypass Stomach to Duodenum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168JA	Bypass Stomach to Jejunum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168JB	Bypass Stomach to Ileum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168JL	Bypass Stomach to Transverse Colon with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168K9	Bypass Stomach to Duodenum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168KA	Bypass Stomach to Jejunum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168KB	Bypass Stomach to Ileum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168KL	Bypass Stomach to Transverse Colon with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0D168Z9	Bypass Stomach to Duodenum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168ZA	Bypass Stomach to Jejunum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168ZB	Bypass Stomach to Ileum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D168ZL	Bypass Stomach to Transverse Colon, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D19079	Bypass Duodenum to Duodenum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1907A	Bypass Duodenum to Jejunum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1907B	Bypass Duodenum to Ileum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D190J9	Bypass Duodenum to Duodenum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D190JA	Bypass Duodenum to Jejunum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D190JB	Bypass Duodenum to Ileum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D190K9	Bypass Duodenum to Duodenum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D190KA	Bypass Duodenum to Jejunum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D190KB	Bypass Duodenum to Ileum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D190Z9	Bypass Duodenum to Duodenum, Open Approach	Procedure	ICD-10-PCS
0D190ZA	Bypass Duodenum to Jejunum, Open Approach	Procedure	ICD-10-PCS
0D190ZB	Bypass Duodenum to Ileum, Open Approach	Procedure	ICD-10-PCS
0D19479	Bypass Duodenum to Duodenum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1947A	Bypass Duodenum to Jejunum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1947B	Bypass Duodenum to Ileum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194J9	Bypass Duodenum to Duodenum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194JA	Bypass Duodenum to Jejunum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0D194JB	Bypass Duodenum to Ileum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194K9	Bypass Duodenum to Duodenum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194KA	Bypass Duodenum to Jejunum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194KB	Bypass Duodenum to Ileum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194Z9	Bypass Duodenum to Duodenum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194ZA	Bypass Duodenum to Jejunum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D194ZB	Bypass Duodenum to Ileum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D19879	Bypass Duodenum to Duodenum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1987A	Bypass Duodenum to Jejunum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1987B	Bypass Duodenum to Ileum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198J9	Bypass Duodenum to Duodenum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198JA	Bypass Duodenum to Jejunum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198JB	Bypass Duodenum to Ileum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198K9	Bypass Duodenum to Duodenum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0D198KA	Bypass Duodenum to Jejunum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198KB	Bypass Duodenum to Ileum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198Z9	Bypass Duodenum to Duodenum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198ZA	Bypass Duodenum to Jejunum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D198ZB	Bypass Duodenum to Ileum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A07A	Bypass Jejunum to Jejunum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1A07B	Bypass Jejunum to Ileum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1A0JA	Bypass Jejunum to Jejunum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D1A0JB	Bypass Jejunum to Ileum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D1A0KA	Bypass Jejunum to Jejunum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1A0KB	Bypass Jejunum to Ileum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1A0ZA	Bypass Jejunum to Jejunum, Open Approach	Procedure	ICD-10-PCS
0D1A0ZB	Bypass Jejunum to Ileum, Open Approach	Procedure	ICD-10-PCS
0D1A47A	Bypass Jejunum to Jejunum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1A47B	Bypass Jejunum to Ileum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1A4JA	Bypass Jejunum to Jejunum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1A4JB	Bypass Jejunum to Ileum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1A4KA	Bypass Jejunum to Jejunum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1A4KB	Bypass Jejunum to Ileum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0D1A4ZA	Bypass Jejunum to Jejunum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1A4ZB	Bypass Jejunum to Ileum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1A87A	Bypass Jejunum to Jejunum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A87B	Bypass Jejunum to Ileum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A8JA	Bypass Jejunum to Jejunum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A8JB	Bypass Jejunum to Ileum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A8KA	Bypass Jejunum to Jejunum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A8KB	Bypass Jejunum to Ileum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A8ZA	Bypass Jejunum to Jejunum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1A8ZB	Bypass Jejunum to Ileum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1B07B	Bypass Ileum to Ileum with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1B0JB	Bypass Ileum to Ileum with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
0D1B0KB	Bypass Ileum to Ileum with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
0D1B0ZB	Bypass Ileum to Ileum, Open Approach	Procedure	ICD-10-PCS
0D1B47B	Bypass Ileum to Ileum with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1B4JB	Bypass Ileum to Ileum with Synthetic Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1B4KB	Bypass Ileum to Ileum with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0D1B4ZB	Bypass Ileum to Ileum, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0D1B87B	Bypass Ileum to Ileum with Autologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1B8JB	Bypass Ileum to Ileum with Synthetic Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1B8KB	Bypass Ileum to Ileum with Nonautologous Tissue Substitute, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1B8ZB	Bypass Ileum to Ileum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0D1B8ZH	Bypass Ileum to Cecum, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
0DB60Z3	Excision of Stomach, Open Approach, Vertical	Procedure	ICD-10-PCS
0DB60ZZ	Excision of Stomach, Open Approach	Procedure	ICD-10-PCS
0DB63Z3	Excision of Stomach, Percutaneous Approach, Vertical	Procedure	ICD-10-PCS
0DB63ZZ	Excision of Stomach, Percutaneous Approach	Procedure	ICD-10-PCS
0DB67Z3	Excision of Stomach, Via Natural or Artificial Opening, Vertical	Procedure	ICD-10-PCS
0DB67ZZ	Excision of Stomach, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
0DB68Z3	Excision of Stomach, Via Natural or Artificial Opening Endoscopic, Vertical	Procedure	ICD-10-PCS
0DB80ZZ	Excision of Small Intestine, Open Approach	Procedure	ICD-10-PCS
0DBB0ZZ	Excision of Ileum, Open Approach	Procedure	ICD-10-PCS
0DV64CZ	Restriction of Stomach with Extraluminal Device, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0F190Z3	Bypass Common Bile Duct to Duodenum, Open Approach	Procedure	ICD-10-PCS
0TRB07Z	Replacement of Bladder with Autologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
43644	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and Roux-en-Y gastroenterostomy (roux limb 150 cm or less)	Procedure	ICD-10-PCS
43645	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and small intestine reconstruction to limit absorption	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
43770	Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric restrictive device (eg, gastric band and subcutaneous port components)	Procedure	ICD-10-PCS
43842	Gastric restrictive procedure, without gastric bypass, for morbid obesity; vertical-banded gastroplasty	Procedure	ICD-10-PCS
43843	Gastric restrictive procedure, without gastric bypass, for morbid obesity; other than vertical-banded gastroplasty	Procedure	ICD-10-PCS
43845	Gastric restrictive procedure with partial gastrectomy, pylorus-preserving duodenoileostomy and ileoileostomy (50 to 100 cm common channel) to limit absorption (biliopancreatic diversion with duodenal switch)	Procedure	ICD-10-PCS
43846	Gastric restrictive procedure, with gastric bypass for morbid obesity; with short limb (150 cm or less) Roux-en-Y gastroenterostomy	Procedure	ICD-10-PCS
43847	Gastric restrictive procedure, with gastric bypass for morbid obesity; with small intestine reconstruction to limit absorption	Procedure	ICD-10-PCS
E66.01	Morbid (severe) obesity due to excess calories	Diagnosis	ICD-10-CM
E66.09	Other obesity due to excess calories	Diagnosis	ICD-10-CM
E66.1	Drug-induced obesity	Diagnosis	ICD-10-CM
E66.2	Morbid (severe) obesity with alveolar hypoventilation	Diagnosis	ICD-10-CM
E66.8	Other obesity	Diagnosis	ICD-10-CM
E66.9	Obesity, unspecified	Diagnosis	ICD-10-CM
K95.01	Infection due to gastric band procedure	Diagnosis	ICD-10-CM
K95.09	Other complications of gastric band procedure	Diagnosis	ICD-10-CM
K95.81	Infection due to other bariatric procedure	Diagnosis	ICD-10-CM
K95.89	Other complications of other bariatric procedure	Diagnosis	ICD-10-CM
O99.210	Obesity complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
O99.211	Obesity complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O99.212	Obesity complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O99.213	Obesity complicating pregnancy, third trimester	Diagnosis	ICD-10-CM
O99.214	Obesity complicating childbirth	Diagnosis	ICD-10-CM
O99.215	Obesity complicating the puerperium	Diagnosis	ICD-10-CM
O99.840	Bariatric surgery status complicating pregnancy, unspecified trimester	Diagnosis	ICD-10-CM
O99.841	Bariatric surgery status complicating pregnancy, first trimester	Diagnosis	ICD-10-CM
O99.842	Bariatric surgery status complicating pregnancy, second trimester	Diagnosis	ICD-10-CM
O99.843	Bariatric surgery status complicating pregnancy, third trimester	Diagnosis	ICD-10-CM
O99.844	Bariatric surgery status complicating childbirth	Diagnosis	ICD-10-CM
O99.845	Bariatric surgery status complicating the puerperium	Diagnosis	ICD-10-CM
Z68.30	Body mass index (BMI) 30.0-30.9, adult	Diagnosis	ICD-10-CM
Z68.31	Body mass index (BMI) 31.0-31.9, adult	Diagnosis	ICD-10-CM
Z68.32	Body mass index (BMI) 32.0-32.9, adult	Diagnosis	ICD-10-CM
Z68.33	Body mass index (BMI) 33.0-33.9, adult	Diagnosis	ICD-10-CM
Z68.34	Body mass index (BMI) 34.0-34.9, adult	Diagnosis	ICD-10-CM
Z68.35	Body mass index (BMI) 35.0-35.9, adult	Diagnosis	ICD-10-CM
Z68.36	Body mass index (BMI) 36.0-36.9, adult	Diagnosis	ICD-10-CM
Z68.37	Body mass index (BMI) 37.0-37.9, adult	Diagnosis	ICD-10-CM
Z68.38	Body mass index (BMI) 38.0-38.9, adult	Diagnosis	ICD-10-CM
Z68.39	Body mass index (BMI) 39.0-39.9, adult	Diagnosis	ICD-10-CM
Z68.41	Body mass index (BMI) 40.0-44.9, adult	Diagnosis	ICD-10-CM
Z68.42	Body mass index (BMI) 45.0-49.9, adult	Diagnosis	ICD-10-CM
Z68.43	Body mass index (BMI) 50.0-59.9, adult	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
Z68.44	Body mass index (BMI) 60.0-69.9, adult	Diagnosis	ICD-10-CM
Z68.45	Body mass index (BMI) 70 or greater, adult	Diagnosis	ICD-10-CM
<b>Pulmonary Conditions</b>			
A22.1	Pulmonary anthrax	Diagnosis	ICD-10-CM
A37.01	Whooping cough due to Bordetella pertussis with pneumonia	Diagnosis	ICD-10-CM
A37.11	Whooping cough due to Bordetella parapertussis with pneumonia	Diagnosis	ICD-10-CM
A37.81	Whooping cough due to other Bordetella species with pneumonia	Diagnosis	ICD-10-CM
A37.91	Whooping cough, unspecified species with pneumonia	Diagnosis	ICD-10-CM
A48.1	Legionnaires' disease	Diagnosis	ICD-10-CM
B25.0	Cytomegaloviral pneumonitis	Diagnosis	ICD-10-CM
B44.0	Invasive pulmonary aspergillosis	Diagnosis	ICD-10-CM
B77.81	Ascariasis pneumonia	Diagnosis	ICD-10-CM
J09.X1	Influenza due to identified novel influenza A virus with pneumonia	Diagnosis	ICD-10-CM
J10.00	Influenza due to other identified influenza virus with unspecified type of pneumonia	Diagnosis	ICD-10-CM
J10.01	Influenza due to other identified influenza virus with the same other identified influenza virus pneumonia	Diagnosis	ICD-10-CM
J10.08	Influenza due to other identified influenza virus with other specified pneumonia	Diagnosis	ICD-10-CM
J11.00	Influenza due to unidentified influenza virus with unspecified type of pneumonia	Diagnosis	ICD-10-CM
J11.08	Influenza due to unidentified influenza virus with specified pneumonia	Diagnosis	ICD-10-CM
J12.0	Adenoviral pneumonia	Diagnosis	ICD-10-CM
J12.1	Respiratory syncytial virus pneumonia	Diagnosis	ICD-10-CM
J12.2	Parainfluenza virus pneumonia	Diagnosis	ICD-10-CM
J12.3	Human metapneumovirus pneumonia	Diagnosis	ICD-10-CM
J12.81	Pneumonia due to SARS-associated coronavirus	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
J12.89	Other viral pneumonia	Diagnosis	ICD-10-CM
J12.9	Viral pneumonia, unspecified	Diagnosis	ICD-10-CM
J13	Pneumonia due to Streptococcus pneumoniae	Diagnosis	ICD-10-CM
J14	Pneumonia due to Hemophilus influenzae	Diagnosis	ICD-10-CM
J15.0	Pneumonia due to Klebsiella pneumoniae	Diagnosis	ICD-10-CM
J15.1	Pneumonia due to Pseudomonas	Diagnosis	ICD-10-CM
J15.20	Pneumonia due to staphylococcus, unspecified	Diagnosis	ICD-10-CM
J15.211	Pneumonia due to Methicillin susceptible Staphylococcus aureus	Diagnosis	ICD-10-CM
J15.212	Pneumonia due to Methicillin resistant Staphylococcus aureus	Diagnosis	ICD-10-CM
J15.29	Pneumonia due to other staphylococcus	Diagnosis	ICD-10-CM
J15.3	Pneumonia due to streptococcus, group B	Diagnosis	ICD-10-CM
J15.4	Pneumonia due to other streptococci	Diagnosis	ICD-10-CM
J15.5	Pneumonia due to Escherichia coli	Diagnosis	ICD-10-CM
J15.6	Pneumonia due to other Gram-negative bacteria	Diagnosis	ICD-10-CM
J15.7	Pneumonia due to Mycoplasma pneumoniae	Diagnosis	ICD-10-CM
J15.8	Pneumonia due to other specified bacteria	Diagnosis	ICD-10-CM
J15.9	Unspecified bacterial pneumonia	Diagnosis	ICD-10-CM
J16.0	Chlamydial pneumonia	Diagnosis	ICD-10-CM
J16.8	Pneumonia due to other specified infectious organisms	Diagnosis	ICD-10-CM
J17	Pneumonia in diseases classified elsewhere	Diagnosis	ICD-10-CM
J18.0	Bronchopneumonia, unspecified organism	Diagnosis	ICD-10-CM
J18.1	Lobar pneumonia, unspecified organism	Diagnosis	ICD-10-CM
J18.8	Other pneumonia, unspecified organism	Diagnosis	ICD-10-CM
J18.9	Pneumonia, unspecified organism	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J69.0	Pneumonitis due to inhalation of food and vomit	Diagnosis	ICD-10-CM
J69.1	Pneumonitis due to inhalation of oils and essences	Diagnosis	ICD-10-CM
J69.8	Pneumonitis due to inhalation of other solids and liquids	Diagnosis	ICD-10-CM
J80	Acute respiratory distress syndrome	Diagnosis	ICD-10-CM
J95.4	Chemical pneumonitis due to anesthesia	Diagnosis	ICD-10-CM
J95.5	Postprocedural subglottic stenosis	Diagnosis	ICD-10-CM
J95.851	Ventilator associated pneumonia	Diagnosis	ICD-10-CM
J95.859	Other complication of respirator [ventilator]	Diagnosis	ICD-10-CM
J95.88	Other intraoperative complications of respiratory system, not elsewhere classified	Diagnosis	ICD-10-CM
J95.89	Other postprocedural complications and disorders of respiratory system, not elsewhere classified	Diagnosis	ICD-10-CM
J96.00	Acute respiratory failure, unspecified whether with hypoxia or hypercapnia	Diagnosis	ICD-10-CM
J96.01	Acute respiratory failure with hypoxia	Diagnosis	ICD-10-CM
J96.02	Acute respiratory failure with hypercapnia	Diagnosis	ICD-10-CM
J96.10	Chronic respiratory failure, unspecified whether with hypoxia or hypercapnia	Diagnosis	ICD-10-CM
J96.11	Chronic respiratory failure with hypoxia	Diagnosis	ICD-10-CM
J96.12	Chronic respiratory failure with hypercapnia	Diagnosis	ICD-10-CM
J96.90	Respiratory failure, unspecified, unspecified whether with hypoxia or hypercapnia	Diagnosis	ICD-10-CM
J96.91	Respiratory failure, unspecified with hypoxia	Diagnosis	ICD-10-CM
J96.92	Respiratory failure, unspecified with hypercapnia	Diagnosis	ICD-10-CM
<b>Sickle Cell Disease</b>			
D57	Sickle-cell disorders	Diagnosis	ICD-10-CM
D57.0	Hb-SS disease with crisis	Diagnosis	ICD-10-CM
D57.00	Hb-SS disease with crisis, unspecified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
D57.01	Hb-SS disease with acute chest syndrome	Diagnosis	ICD-10-CM
D57.02	Hb-SS disease with splenic sequestration	Diagnosis	ICD-10-CM
D57.1	Sickle-cell disease without crisis	Diagnosis	ICD-10-CM
D57.2	Sickle-cell/Hb-C disease	Diagnosis	ICD-10-CM
D57.20	Sickle-cell/Hb-C disease without crisis	Diagnosis	ICD-10-CM
D57.21	Sickle-cell/Hb-C disease with crisis	Diagnosis	ICD-10-CM
D57.211	Sickle-cell/Hb-C disease with acute chest syndrome	Diagnosis	ICD-10-CM
D57.212	Sickle-cell/Hb-C disease with splenic sequestration	Diagnosis	ICD-10-CM
D57.219	Sickle-cell/Hb-C disease with crisis, unspecified	Diagnosis	ICD-10-CM
D57.3	Sickle-cell trait	Diagnosis	ICD-10-CM
D57.4	Sickle-cell thalassemia	Diagnosis	ICD-10-CM
D57.40	Sickle-cell thalassemia without crisis	Diagnosis	ICD-10-CM
D57.41	Sickle-cell thalassemia with crisis	Diagnosis	ICD-10-CM
D57.411	Sickle-cell thalassemia with acute chest syndrome	Diagnosis	ICD-10-CM
D57.412	Sickle-cell thalassemia with splenic sequestration	Diagnosis	ICD-10-CM
D57.419	Sickle-cell thalassemia with crisis, unspecified	Diagnosis	ICD-10-CM
D57.8	Other sickle-cell disorders	Diagnosis	ICD-10-CM
D57.80	Other sickle-cell disorders without crisis	Diagnosis	ICD-10-CM
D57.81	Other sickle-cell disorders with crisis	Diagnosis	ICD-10-CM
D57.811	Other sickle-cell disorders with acute chest syndrome	Diagnosis	ICD-10-CM
D57.812	Other sickle-cell disorders with splenic sequestration	Diagnosis	ICD-10-CM
D57.819	Other sickle-cell disorders with crisis, unspecified	Diagnosis	ICD-10-CM
<b>Smoking</b>			
1034F	Current tobacco smoker (CAD, CAP, COPD, PV) (DM)	Procedure	CPT-2

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
4001F	Tobacco use cessation intervention, pharmacologic therapy (COPD, CAD, CAP, PV, Asthma) (DM) (PV)	Procedure	CPT-2
4004F	Patient screened for tobacco use and received tobacco cessation intervention (counseling, pharmacotherapy, or both), if identified as a tobacco user (PV, CAD)	Procedure	CPT-2
99406	Smoking and tobacco use cessation counseling visit; intermediate, greater than 3 minutes up to 10 minutes	Procedure	CPT-4
99407	Smoking and tobacco use cessation counseling visit; intensive, greater than 10 minutes	Procedure	CPT-4
F17.21	Nicotine dependence, cigarettes	Diagnosis	ICD-10-CM
F17.210	Nicotine dependence, cigarettes, uncomplicated	Diagnosis	ICD-10-CM
F17.211	Nicotine dependence, cigarettes, in remission	Diagnosis	ICD-10-CM
F17.213	Nicotine dependence, cigarettes, with withdrawal	Diagnosis	ICD-10-CM
F17.218	Nicotine dependence, cigarettes, with other nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.219	Nicotine dependence, cigarettes, with unspecified nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.29	Nicotine dependence, other tobacco product	Diagnosis	ICD-10-CM
F17.290	Nicotine dependence, other tobacco product, uncomplicated	Diagnosis	ICD-10-CM
F17.291	Nicotine dependence, other tobacco product, in remission	Diagnosis	ICD-10-CM
F17.293	Nicotine dependence, other tobacco product, with withdrawal	Diagnosis	ICD-10-CM
F17.298	Nicotine dependence, other tobacco product, with other nicotine-induced disorders	Diagnosis	ICD-10-CM
F17.299	Nicotine dependence, other tobacco product, with unspecified nicotine-induced disorders	Diagnosis	ICD-10-CM
G0436	Smoking and tobacco cessation counseling visit for the asymptomatic patient; intermediate, greater than 3 minutes, up to 10 minutes	Procedure	HCPCS
G9016	Smoking cessation counseling, individual, in the absence of or in addition to any other evaluation and management service, per session (6-10 minutes) [demo project code only]	Procedure	HCPCS
G9276	Documentation that patient is a current tobacco user	Procedure	HCPCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
G9458	Patient documented as tobacco user and received tobacco cessation intervention (must include at least one of the following: advice given to quit smoking or tobacco use, counseling on the benefits of quitting smoking or tobacco use, assistance with or referral to external smoking or tobacco cessation support programs, or current enrollment in smoking or tobacco use cessation program) if identified as a tobacco user	Procedure	HCPCS
S4995	Smoking cessation gum	Procedure	HCPCS
S9453	Smoking cessation classes, nonphysician provider, per session	Procedure	HCPCS
Z71.6	Tobacco abuse counseling	Diagnosis	ICD-10-CM
Z72.0	Tobacco use	Diagnosis	ICD-10-CM
Z87.891	Personal history of nicotine dependence	Diagnosis	ICD-10-CM
<b>Solid Organ Transplant</b>			
0055U	Cardiology (heart transplant), cell-free DNA, PCR assay of 96 DNA target sequences (94 single nucleotide polymorphism targets and two control targets), plasma	Procedure	CPT-4
0087U	Cardiology (heart transplant), mRNA gene expression profiling by microarray of 1283 genes, transplant biopsy tissue, allograft rejection and injury algorithm reported as a probability score	Procedure	CPT-4
0088U	Transplantation medicine (kidney allograft rejection), microarray gene expression profiling of 1494 genes, utilizing transplant biopsy tissue, algorithm reported as a probability score for rejection	Procedure	CPT-4
0141T	Pancreatic islet cell transplantation through portal vein, percutaneous	Procedure	CPT-3
0142T	Pancreatic islet cell transplantation through portal vein, open	Procedure	CPT-3
0143T	Laparoscopy, surgical, pancreatic islet cell transplantation through portal vein	Procedure	CPT-3
02Y	Heart and Great Vessels, Transplantation	Procedure	ICD-10-PCS
02YA	Transplantation / Heart	Procedure	ICD-10-PCS
02YA0Z0	Transplantation of Heart, Allogeneic, Open Approach	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
02YA0Z1	Transplantation of Heart, Syngeneic, Open Approach	Procedure	ICD-10-PCS
02YA0Z2	Transplantation of Heart, Zooplasic, Open Approach	Procedure	ICD-10-PCS
0584T	Islet cell transplant, includes portal vein catheterization and infusion, including all imaging, including guidance, and radiological supervision and interpretation, when performed; percutaneous	Procedure	CPT-3
0585T	Islet cell transplant, includes portal vein catheterization and infusion, including all imaging, including guidance, and radiological supervision and interpretation, when performed; laparoscopic	Procedure	CPT-3
0586T	Islet cell transplant, includes portal vein catheterization and infusion, including all imaging, including guidance, and radiological supervision and interpretation, when performed; open	Procedure	CPT-3
07Y	Lymphatic and Hemic Systems, Transplantation	Procedure	ICD-10-PCS
07YM	Transplantation / Thymus	Procedure	ICD-10-PCS
07YM0Z0	Transplantation of Thymus, Allogeneic, Open Approach	Procedure	ICD-10-PCS
07YM0Z1	Transplantation of Thymus, Syngeneic, Open Approach	Procedure	ICD-10-PCS
07YM0Z2	Transplantation of Thymus, Zooplasic, Open Approach	Procedure	ICD-10-PCS
07YP	Transplantation / Spleen	Procedure	ICD-10-PCS
07YP0Z0	Transplantation of Spleen, Allogeneic, Open Approach	Procedure	ICD-10-PCS
07YP0Z1	Transplantation of Spleen, Syngeneic, Open Approach	Procedure	ICD-10-PCS
07YP0Z2	Transplantation of Spleen, Zooplasic, Open Approach	Procedure	ICD-10-PCS
0BY	Respiratory System, Transplantation	Procedure	ICD-10-PCS
0BYC	Transplantation / Upper Lung Lobe, Right	Procedure	ICD-10-PCS
0BYC0Z0	Transplantation of Right Upper Lung Lobe, Allogeneic, Open Approach	Procedure	ICD-10-PCS
0BYC0Z1	Transplantation of Right Upper Lung Lobe, Syngeneic, Open Approach	Procedure	ICD-10-PCS
0BYC0Z2	Transplantation of Right Upper Lung Lobe, Zooplasic, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
OBYD	Transplantation / Middle Lung Lobe, Right	Procedure	ICD-10-PCS
OBYD0Z0	Transplantation of Right Middle Lung Lobe, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYD0Z1	Transplantation of Right Middle Lung Lobe, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYD0Z2	Transplantation of Right Middle Lung Lobe, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OBYF	Transplantation / Lower Lung Lobe, Right	Procedure	ICD-10-PCS
OBYF0Z0	Transplantation of Right Lower Lung Lobe, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYF0Z1	Transplantation of Right Lower Lung Lobe, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYF0Z2	Transplantation of Right Lower Lung Lobe, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OBYG	Transplantation / Upper Lung Lobe, Left	Procedure	ICD-10-PCS
OBYG0Z0	Transplantation of Left Upper Lung Lobe, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYG0Z1	Transplantation of Left Upper Lung Lobe, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYG0Z2	Transplantation of Left Upper Lung Lobe, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OBYH	Transplantation / Lung Lingula	Procedure	ICD-10-PCS
OBYH0Z0	Transplantation of Lung Lingula, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYH0Z1	Transplantation of Lung Lingula, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYH0Z2	Transplantation of Lung Lingula, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OBYJ	Transplantation / Lower Lung Lobe, Left	Procedure	ICD-10-PCS
OBYJ0Z0	Transplantation of Left Lower Lung Lobe, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYJ0Z1	Transplantation of Left Lower Lung Lobe, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYJ0Z2	Transplantation of Left Lower Lung Lobe, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OBYK	Transplantation / Lung, Right	Procedure	ICD-10-PCS
OBYK0Z0	Transplantation of Right Lung, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYK0Z1	Transplantation of Right Lung, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYK0Z2	Transplantation of Right Lung, Zooplastic, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
OBYL	Transplantation / Lung, Left	Procedure	ICD-10-PCS
OBYLOZ0	Transplantation of Left Lung, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYLOZ1	Transplantation of Left Lung, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYLOZ2	Transplantation of Left Lung, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OBYM	Transplantation / Lungs, Bilateral	Procedure	ICD-10-PCS
OBYM0Z0	Transplantation of Bilateral Lungs, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OBYM0Z1	Transplantation of Bilateral Lungs, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OBYM0Z2	Transplantation of Bilateral Lungs, Zooplastic, Open Approach	Procedure	ICD-10-PCS
ODY	Gastrointestinal System, Transplantation	Procedure	ICD-10-PCS
ODY5	Transplantation / Esophagus	Procedure	ICD-10-PCS
ODY50Z0	Transplantation of Esophagus, Allogeneic, Open Approach	Procedure	ICD-10-PCS
ODY50Z1	Transplantation of Esophagus, Syngeneic, Open Approach	Procedure	ICD-10-PCS
ODY50Z2	Transplantation of Esophagus, Zooplastic, Open Approach	Procedure	ICD-10-PCS
ODY6	Transplantation / Stomach	Procedure	ICD-10-PCS
ODY60Z0	Transplantation of Stomach, Allogeneic, Open Approach	Procedure	ICD-10-PCS
ODY60Z1	Transplantation of Stomach, Syngeneic, Open Approach	Procedure	ICD-10-PCS
ODY60Z2	Transplantation of Stomach, Zooplastic, Open Approach	Procedure	ICD-10-PCS
ODY8	Transplantation / Small Intestine	Procedure	ICD-10-PCS
ODY80Z0	Transplantation of Small Intestine, Allogeneic, Open Approach	Procedure	ICD-10-PCS
ODY80Z1	Transplantation of Small Intestine, Syngeneic, Open Approach	Procedure	ICD-10-PCS
ODY80Z2	Transplantation of Small Intestine, Zooplastic, Open Approach	Procedure	ICD-10-PCS
ODYE	Transplantation / Large Intestine	Procedure	ICD-10-PCS
ODYE0Z0	Transplantation of Large Intestine, Allogeneic, Open Approach	Procedure	ICD-10-PCS
ODYE0Z1	Transplantation of Large Intestine, Syngeneic, Open Approach	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
ODYE0Z2	Transplantation of Large Intestine, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OFY	Hepatobiliary System and Pancreas, Transplantation	Procedure	ICD-10-PCS
OFY0	Transplantation / Liver	Procedure	ICD-10-PCS
OFY00Z0	Transplantation of Liver, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OFY00Z1	Transplantation of Liver, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OFY00Z2	Transplantation of Liver, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OFYG	Transplantation / Pancreas	Procedure	ICD-10-PCS
OFYG0Z0	Transplantation of Pancreas, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OFYG0Z1	Transplantation of Pancreas, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OFYG0Z2	Transplantation of Pancreas, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OTY	Urinary System, Transplantation	Procedure	ICD-10-PCS
OTY0	Transplantation / Kidney, Right	Procedure	ICD-10-PCS
OTY00Z0	Transplantation of Right Kidney, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OTY00Z1	Transplantation of Right Kidney, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OTY00Z2	Transplantation of Right Kidney, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OTY1	Transplantation / Kidney, Left	Procedure	ICD-10-PCS
OTY10Z0	Transplantation of Left Kidney, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OTY10Z1	Transplantation of Left Kidney, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OTY10Z2	Transplantation of Left Kidney, Zooplastic, Open Approach	Procedure	ICD-10-PCS
OUY	Female Reproductive System, Transplantation	Procedure	ICD-10-PCS
OUY0	Transplantation / Ovary, Right	Procedure	ICD-10-PCS
OUY00Z0	Transplantation of Right Ovary, Allogeneic, Open Approach	Procedure	ICD-10-PCS
OUY00Z1	Transplantation of Right Ovary, Syngeneic, Open Approach	Procedure	ICD-10-PCS
OUY00Z2	Transplantation of Right Ovary, Zooplastic, Open Approach	Procedure	ICD-10-PCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
0UY1	Transplantation / Ovary, Left	Procedure	ICD-10-PCS
0UY10Z0	Transplantation of Left Ovary, Allogeneic, Open Approach	Procedure	ICD-10-PCS
0UY10Z1	Transplantation of Left Ovary, Syngeneic, Open Approach	Procedure	ICD-10-PCS
0UY10Z2	Transplantation of Left Ovary, Zooplastic, Open Approach	Procedure	ICD-10-PCS
0UY9	Transplantation / Uterus	Procedure	ICD-10-PCS
0UY90Z0	Transplantation of Uterus, Allogeneic, Open Approach	Procedure	ICD-10-PCS
0UY90Z1	Transplantation of Uterus, Syngeneic, Open Approach	Procedure	ICD-10-PCS
0UY90Z2	Transplantation of Uterus, Zooplastic, Open Approach	Procedure	ICD-10-PCS
0WY	Anatomical Regions, General, Transplantation	Procedure	ICD-10-PCS
0WY2	Transplantation / Face	Procedure	ICD-10-PCS
0WY20Z0	Transplantation of Face, Allogeneic, Open Approach	Procedure	ICD-10-PCS
0WY20Z1	Transplantation of Face, Syngeneic, Open Approach	Procedure	ICD-10-PCS
0XY	Anatomical Regions, Upper Extremities, Transplantation	Procedure	ICD-10-PCS
0XYJ	Transplantation / Hand, Right	Procedure	ICD-10-PCS
0XYJ0Z0	Transplantation of Right Hand, Allogeneic, Open Approach	Procedure	ICD-10-PCS
0XYJ0Z1	Transplantation of Right Hand, Syngeneic, Open Approach	Procedure	ICD-10-PCS
0XYK	Transplantation / Hand, Left	Procedure	ICD-10-PCS
0XYK0Z0	Transplantation of Left Hand, Allogeneic, Open Approach	Procedure	ICD-10-PCS
0XYK0Z1	Transplantation of Left Hand, Syngeneic, Open Approach	Procedure	ICD-10-PCS
23440	Resection or transplantation of long tendon of biceps	Procedure	CPT-4
29868	Arthroscopy, knee, surgical; meniscal transplantation (includes arthrotomy for meniscal insertion), medial or lateral	Procedure	CPT-4
32851	Lung transplant, single; without cardiopulmonary bypass	Procedure	CPT-4
32852	Lung transplant, single; with cardiopulmonary bypass	Procedure	CPT-4

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Code	Description	Code Category	Code Type
32853	Lung transplant, double (bilateral sequential or en bloc); without cardiopulmonary bypass	Procedure	CPT-4
32854	Lung transplant, double (bilateral sequential or en bloc); with cardiopulmonary bypass	Procedure	CPT-4
33927	Implantation of a total replacement heart system (artificial heart) with recipient cardiectomy	Procedure	CPT-4
33935	Heart-lung transplant with recipient cardiectomy-pneumonectomy	Procedure	CPT-4
33945	Heart transplant, with or without recipient cardiectomy	Procedure	CPT-4
43625	GASTRECTOMY,TOTAL;W REPAIR INTESTINAL TRANSPLANT	Procedure	CPT-4
44135	Intestinal allotransplantation; from cadaver donor	Procedure	CPT-4
44136	Intestinal allotransplantation; from living donor	Procedure	CPT-4
47135	Liver allotransplantation, orthotopic, partial or whole, from cadaver or living donor, any age	Procedure	CPT-4
47136	Liver allotransplantation; heterotopic, partial or whole, from cadaver or living donor, any age	Procedure	CPT-4
48160	Pancreatectomy, total or subtotal, with autologous transplantation of pancreas or pancreatic islet cells	Procedure	CPT-4
48554	Transplantation of pancreatic allograft	Procedure	CPT-4
50340	Recipient nephrectomy (separate procedure)	Procedure	CPT-4
50360	Renal allotransplantation, implantation of graft; without recipient nephrectomy	Procedure	CPT-4
50365	Renal allotransplantation, implantation of graft; with recipient nephrectomy	Procedure	CPT-4
50366	Renal Homotransplantation, Implantation Of Graft	Procedure	CPT-4
50380	Renal autotransplantation, reimplantation of kidney	Procedure	CPT-4
60510	Transplantation Of Parathyroid Gland(s) During Thyroidectomy	Procedure	CPT-4
60512	Parathyroid autotransplantation (List separately in addition to code for primary procedure)	Procedure	CPT-4
65710	Keratoplasty (corneal transplant); anterior lamellar	Procedure	CPT-4
65720	Keratoplasty (corneal Transplant), Lamellar	Procedure	CPT-4
65725	Keratoplasty (corneal Transplant), Lamellar	Procedure	CPT-4
65730	Keratoplasty (corneal transplant); penetrating (except in aphakia or pseudophakia)	Procedure	CPT-4

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Code	Description	Code Category	Code Type
65740	Keratoplasty (corneal Transplant), Penetrating (except In	Procedure	CPT-4
65745	Keratoplasty (corneal Transplant), Penetrating (except In	Procedure	CPT-4
65750	Keratoplasty (corneal transplant); penetrating (in aphakia)	Procedure	CPT-4
65755	Keratoplasty (corneal transplant); penetrating (in pseudophakia)	Procedure	CPT-4
65756	Keratoplasty (corneal transplant); endothelial	Procedure	CPT-4
65767	Epikeratoplasty	Procedure	CPT-4
65780	Ocular surface reconstruction; amniotic membrane transplantation, multiple layers	Procedure	CPT-4
65781	Ocular surface reconstruction; limbal stem cell allograft (eg, cadaveric or living donor)	Procedure	CPT-4
65782	Ocular surface reconstruction; limbal conjunctival autograft (includes obtaining graft)	Procedure	CPT-4
76776	Ultrasound, transplanted kidney, real time and duplex Doppler with image documentation	Procedure	CPT-4
76778	Ultrasound, transplanted kidney, B-scan and/or real time with image documentation, with or without duplex Doppler study	Procedure	CPT-4
81495	Cardiology (heart transplant), mRNA, gene expression profiling by real-time quantitative PCR of 20 genes (11 content and 9 housekeeping), utilizing subfraction of peripheral blood, algorithm reported as a rejection risk score	Procedure	CPT-4
81595	Cardiology (heart transplant), mRNA, gene expression profiling by real-time quantitative PCR of 20 genes (11 content and 9 housekeeping), utilizing subfraction of peripheral blood, algorithm reported as a rejection risk score	Procedure	CPT-4
G0341	Percutaneous islet cell transplant, includes portal vein catheterization and infusion	Procedure	HCPCS
G0342	Laparoscopy for islet cell transplant, includes portal vein catheterization and infusion	Procedure	HCPCS
G0343	Laparotomy for islet cell transplant, includes portal vein catheterization and infusion	Procedure	HCPCS
S2052	Transplantation of small intestine allograft (there are cpt codes available for intestinal allotransplantation - 44135 for graft from cadaver donor or 44136 for graft from living donor)	Procedure	HCPCS
S2053	Transplantation of small intestine and liver allografts	Procedure	HCPCS



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Code	Description	Code Category	Code Type
S2054	Transplantation of multivisceral organs	Procedure	HCPCS
S2060	Lobar lung transplantation	Procedure	HCPCS
S2065	Simultaneous pancreas kidney transplantation	Procedure	HCPCS
S2102	Islet cell tissue transplant from pancreas; allogeneic	Procedure	HCPCS
S2103	Adrenal tissue transplant to brain	Procedure	HCPCS
S2109	Autologous chondrocyte transplantation (preparation of autologous cultured chondrocytes)	Procedure	HCPCS
S2152	Solid organ(s), complete or segmental, single organ or combination of organs; deceased or living donor(s), procurement, transplantation, and related complications; including: drugs; supplies; hospitalization with outpatient follow-up; medical/surgical, diagnostic, emergency, and rehabilitative services, and the number of days of pre- and posttransplant care in the global definition	Procedure	HCPCS

**Vascular Disease**

I01	Rheumatic fever with heart involvement	Diagnosis	ICD-10-CM
I01.0	Acute rheumatic pericarditis	Diagnosis	ICD-10-CM
I01.1	Acute rheumatic endocarditis	Diagnosis	ICD-10-CM
I01.2	Acute rheumatic myocarditis	Diagnosis	ICD-10-CM
I01.8	Other acute rheumatic heart disease	Diagnosis	ICD-10-CM
I01.9	Acute rheumatic heart disease, unspecified	Diagnosis	ICD-10-CM
I02.0	Rheumatic chorea with heart involvement	Diagnosis	ICD-10-CM
I05	Rheumatic mitral valve diseases	Diagnosis	ICD-10-CM
I05.0	Rheumatic mitral stenosis	Diagnosis	ICD-10-CM
I05.1	Rheumatic mitral insufficiency	Diagnosis	ICD-10-CM
I05.2	Rheumatic mitral stenosis with insufficiency	Diagnosis	ICD-10-CM
I05.8	Other rheumatic mitral valve diseases	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I05.9	Rheumatic mitral valve disease, unspecified	Diagnosis	ICD-10-CM
I06	Rheumatic aortic valve diseases	Diagnosis	ICD-10-CM
I06.0	Rheumatic aortic stenosis	Diagnosis	ICD-10-CM
I06.1	Rheumatic aortic insufficiency	Diagnosis	ICD-10-CM
I06.2	Rheumatic aortic stenosis with insufficiency	Diagnosis	ICD-10-CM
I06.8	Other rheumatic aortic valve diseases	Diagnosis	ICD-10-CM
I06.9	Rheumatic aortic valve disease, unspecified	Diagnosis	ICD-10-CM
I07	Rheumatic tricuspid valve diseases	Diagnosis	ICD-10-CM
I07.0	Rheumatic tricuspid stenosis	Diagnosis	ICD-10-CM
I07.1	Rheumatic tricuspid insufficiency	Diagnosis	ICD-10-CM
I07.2	Rheumatic tricuspid stenosis and insufficiency	Diagnosis	ICD-10-CM
I07.8	Other rheumatic tricuspid valve diseases	Diagnosis	ICD-10-CM
I07.9	Rheumatic tricuspid valve disease, unspecified	Diagnosis	ICD-10-CM
I08	Multiple valve diseases	Diagnosis	ICD-10-CM
I08.0	Rheumatic disorders of both mitral and aortic valves	Diagnosis	ICD-10-CM
I08.1	Rheumatic disorders of both mitral and tricuspid valves	Diagnosis	ICD-10-CM
I08.2	Rheumatic disorders of both aortic and tricuspid valves	Diagnosis	ICD-10-CM
I08.3	Combined rheumatic disorders of mitral, aortic and tricuspid valves	Diagnosis	ICD-10-CM
I08.8	Other rheumatic multiple valve diseases	Diagnosis	ICD-10-CM
I08.9	Rheumatic multiple valve disease, unspecified	Diagnosis	ICD-10-CM
I09	Other rheumatic heart diseases	Diagnosis	ICD-10-CM
I09.0	Rheumatic myocarditis	Diagnosis	ICD-10-CM
I09.1	Rheumatic diseases of endocardium, valve unspecified	Diagnosis	ICD-10-CM
I09.2	Chronic rheumatic pericarditis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I09.8	Other specified rheumatic heart diseases	Diagnosis	ICD-10-CM
I09.81	Rheumatic heart failure	Diagnosis	ICD-10-CM
I09.89	Other specified rheumatic heart diseases	Diagnosis	ICD-10-CM
I09.9	Rheumatic heart disease, unspecified	Diagnosis	ICD-10-CM
I10	Essential (primary) hypertension	Diagnosis	ICD-10-CM
I11	Hypertensive heart disease	Diagnosis	ICD-10-CM
I11.0	Hypertensive heart disease with heart failure	Diagnosis	ICD-10-CM
I11.9	Hypertensive heart disease without heart failure	Diagnosis	ICD-10-CM
I12	Hypertensive chronic kidney disease	Diagnosis	ICD-10-CM
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease	Diagnosis	ICD-10-CM
I12.9	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13	Hypertensive heart and chronic kidney disease	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.1	Hypertensive heart and chronic kidney disease without heart failure	Diagnosis	ICD-10-CM
I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I15	Secondary hypertension	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I15.0	Renovascular hypertension	Diagnosis	ICD-10-CM
I15.1	Hypertension secondary to other renal disorders	Diagnosis	ICD-10-CM
I15.2	Hypertension secondary to endocrine disorders	Diagnosis	ICD-10-CM
I15.8	Other secondary hypertension	Diagnosis	ICD-10-CM
I15.9	Secondary hypertension, unspecified	Diagnosis	ICD-10-CM
I16	Hypertensive crisis	Diagnosis	ICD-10-CM
I16.0	Hypertensive urgency	Diagnosis	ICD-10-CM
I16.1	Hypertensive emergency	Diagnosis	ICD-10-CM
I16.9	Hypertensive crisis, unspecified	Diagnosis	ICD-10-CM
I20	Angina pectoris	Diagnosis	ICD-10-CM
I20.0	Unstable angina	Diagnosis	ICD-10-CM
I20.1	Angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I20.8	Other forms of angina pectoris	Diagnosis	ICD-10-CM
I20.9	Angina pectoris, unspecified	Diagnosis	ICD-10-CM
I21	Acute myocardial infarction	Diagnosis	ICD-10-CM
I21.0	ST elevation (STEMI) myocardial infarction of anterior wall	Diagnosis	ICD-10-CM
I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery	Diagnosis	ICD-10-CM
I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery	Diagnosis	ICD-10-CM
I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall	Diagnosis	ICD-10-CM
I21.1	ST elevation (STEMI) myocardial infarction of inferior wall	Diagnosis	ICD-10-CM
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery	Diagnosis	ICD-10-CM
I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall	Diagnosis	ICD-10-CM
I21.2	ST elevation (STEMI) myocardial infarction of other sites	Diagnosis	ICD-10-CM
I21.21	ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I21.29	ST elevation (STEMI) myocardial infarction involving other sites	Diagnosis	ICD-10-CM
I21.3	ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I21.4	Non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I21.9	Acute myocardial infarction, unspecified	Diagnosis	ICD-10-CM
I21.A	Other type of myocardial infarction	Diagnosis	ICD-10-CM
I21.A1	Myocardial infarction type 2	Diagnosis	ICD-10-CM
I21.A9	Other myocardial infarction type	Diagnosis	ICD-10-CM
I22	Subsequent ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall	Diagnosis	ICD-10-CM
I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall	Diagnosis	ICD-10-CM
I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites	Diagnosis	ICD-10-CM
I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I23	Certain current complications following ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction (within the 28 day period)	Diagnosis	ICD-10-CM
I23.0	Hemopericardium as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.1	Atrial septal defect as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.2	Ventricular septal defect as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.3	Rupture of cardiac wall without hemopericardium as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.4	Rupture of chordae tendineae as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.5	Rupture of papillary muscle as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.6	Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I23.7	Postinfarction angina	Diagnosis	ICD-10-CM
I23.8	Other current complications following acute myocardial infarction	Diagnosis	ICD-10-CM
I24	Other acute ischemic heart diseases	Diagnosis	ICD-10-CM
I24.0	Acute coronary thrombosis not resulting in myocardial infarction	Diagnosis	ICD-10-CM
I24.1	Dressler's syndrome	Diagnosis	ICD-10-CM
I24.8	Other forms of acute ischemic heart disease	Diagnosis	ICD-10-CM
I24.9	Acute ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
I25	Chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.1	Atherosclerotic heart disease of native coronary artery	Diagnosis	ICD-10-CM
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris	Diagnosis	ICD-10-CM
I25.11	Atherosclerotic heart disease of native coronary artery with angina pectoris	Diagnosis	ICD-10-CM
I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.2	Old myocardial infarction	Diagnosis	ICD-10-CM
I25.3	Aneurysm of heart	Diagnosis	ICD-10-CM
I25.4	Coronary artery aneurysm and dissection	Diagnosis	ICD-10-CM
I25.41	Coronary artery aneurysm	Diagnosis	ICD-10-CM
I25.42	Coronary artery dissection	Diagnosis	ICD-10-CM
I25.5	Ischemic cardiomyopathy	Diagnosis	ICD-10-CM
I25.6	Silent myocardial ischemia	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I25.7	Atherosclerosis of coronary artery bypass graft(s) and coronary artery of transplanted heart with angina pectoris	Diagnosis	ICD-10-CM
I25.70	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris	Diagnosis	ICD-10-CM
I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.71	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.72	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.73	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.75	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris	Diagnosis	ICD-10-CM
I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.76	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris	Diagnosis	ICD-10-CM
I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.79	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris	Diagnosis	ICD-10-CM
I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.8	Other forms of chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.81	Atherosclerosis of other coronary vessels without angina pectoris	Diagnosis	ICD-10-CM
I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris	Diagnosis	ICD-10-CM
I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM
I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM
I25.82	Chronic total occlusion of coronary artery	Diagnosis	ICD-10-CM
I25.83	Coronary atherosclerosis due to lipid rich plaque	Diagnosis	ICD-10-CM
I25.84	Coronary atherosclerosis due to calcified coronary lesion	Diagnosis	ICD-10-CM
I25.89	Other forms of chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.9	Chronic ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
I26	Pulmonary embolism	Diagnosis	ICD-10-CM
I26.0	Pulmonary embolism with acute cor pulmonale	Diagnosis	ICD-10-CM
I26.01	Septic pulmonary embolism with acute cor pulmonale	Diagnosis	ICD-10-CM
I26.02	Saddle embolus of pulmonary artery with acute cor pulmonale	Diagnosis	ICD-10-CM
I26.09	Other pulmonary embolism with acute cor pulmonale	Diagnosis	ICD-10-CM
I26.9	Pulmonary embolism without acute cor pulmonale	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I26.90	Septic pulmonary embolism without acute cor pulmonale	Diagnosis	ICD-10-CM
I26.92	Saddle embolus of pulmonary artery without acute cor pulmonale	Diagnosis	ICD-10-CM
I26.93	Single subsegmental pulmonary embolism without acute cor pulmonale	Diagnosis	ICD-10-CM
I26.94	Multiple subsegmental pulmonary emboli without acute cor pulmonale	Diagnosis	ICD-10-CM
I26.99	Other pulmonary embolism without acute cor pulmonale	Diagnosis	ICD-10-CM
I27	Other pulmonary heart diseases	Diagnosis	ICD-10-CM
I27.0	Primary pulmonary hypertension	Diagnosis	ICD-10-CM
I27.1	Kyphoscoliotic heart disease	Diagnosis	ICD-10-CM
I27.2	Other secondary pulmonary hypertension	Diagnosis	ICD-10-CM
I27.20	Pulmonary hypertension, unspecified	Diagnosis	ICD-10-CM
I27.21	Secondary pulmonary arterial hypertension	Diagnosis	ICD-10-CM
I27.22	Pulmonary hypertension due to left heart disease	Diagnosis	ICD-10-CM
I27.23	Pulmonary hypertension due to lung diseases and hypoxia	Diagnosis	ICD-10-CM
I27.24	Chronic thromboembolic pulmonary hypertension	Diagnosis	ICD-10-CM
I27.29	Other secondary pulmonary hypertension	Diagnosis	ICD-10-CM
I27.8	Other specified pulmonary heart diseases	Diagnosis	ICD-10-CM
I27.81	Cor pulmonale (chronic)	Diagnosis	ICD-10-CM
I27.82	Chronic pulmonary embolism	Diagnosis	ICD-10-CM
I27.83	Eisenmenger's syndrome	Diagnosis	ICD-10-CM
I27.89	Other specified pulmonary heart diseases	Diagnosis	ICD-10-CM
I27.9	Pulmonary heart disease, unspecified	Diagnosis	ICD-10-CM
I28	Other diseases of pulmonary vessels	Diagnosis	ICD-10-CM
I28.0	Arteriovenous fistula of pulmonary vessels	Diagnosis	ICD-10-CM
I28.1	Aneurysm of pulmonary artery	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I28.8	Other diseases of pulmonary vessels	Diagnosis	ICD-10-CM
I28.9	Disease of pulmonary vessels, unspecified	Diagnosis	ICD-10-CM
I30	Acute pericarditis	Diagnosis	ICD-10-CM
I30.0	Acute nonspecific idiopathic pericarditis	Diagnosis	ICD-10-CM
I30.1	Infective pericarditis	Diagnosis	ICD-10-CM
I30.8	Other forms of acute pericarditis	Diagnosis	ICD-10-CM
I30.9	Acute pericarditis, unspecified	Diagnosis	ICD-10-CM
I31	Other diseases of pericardium	Diagnosis	ICD-10-CM
I31.0	Chronic adhesive pericarditis	Diagnosis	ICD-10-CM
I31.1	Chronic constrictive pericarditis	Diagnosis	ICD-10-CM
I31.2	Hemopericardium, not elsewhere classified	Diagnosis	ICD-10-CM
I31.3	Pericardial effusion (noninflammatory)	Diagnosis	ICD-10-CM
I31.4	Cardiac tamponade	Diagnosis	ICD-10-CM
I31.8	Other specified diseases of pericardium	Diagnosis	ICD-10-CM
I31.9	Disease of pericardium, unspecified	Diagnosis	ICD-10-CM
I32	Pericarditis in diseases classified elsewhere	Diagnosis	ICD-10-CM
I33	Acute and subacute endocarditis	Diagnosis	ICD-10-CM
I33.0	Acute and subacute infective endocarditis	Diagnosis	ICD-10-CM
I33.9	Acute and subacute endocarditis, unspecified	Diagnosis	ICD-10-CM
I34	Nonrheumatic mitral valve disorders	Diagnosis	ICD-10-CM
I34.0	Nonrheumatic mitral (valve) insufficiency	Diagnosis	ICD-10-CM
I34.1	Nonrheumatic mitral (valve) prolapse	Diagnosis	ICD-10-CM
I34.2	Nonrheumatic mitral (valve) stenosis	Diagnosis	ICD-10-CM
I34.8	Other nonrheumatic mitral valve disorders	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I34.9	Nonrheumatic mitral valve disorder, unspecified	Diagnosis	ICD-10-CM
I35	Nonrheumatic aortic valve disorders	Diagnosis	ICD-10-CM
I35.0	Nonrheumatic aortic (valve) stenosis	Diagnosis	ICD-10-CM
I35.1	Nonrheumatic aortic (valve) insufficiency	Diagnosis	ICD-10-CM
I35.2	Nonrheumatic aortic (valve) stenosis with insufficiency	Diagnosis	ICD-10-CM
I35.8	Other nonrheumatic aortic valve disorders	Diagnosis	ICD-10-CM
I35.9	Nonrheumatic aortic valve disorder, unspecified	Diagnosis	ICD-10-CM
I36	Nonrheumatic tricuspid valve disorders	Diagnosis	ICD-10-CM
I36.0	Nonrheumatic tricuspid (valve) stenosis	Diagnosis	ICD-10-CM
I36.1	Nonrheumatic tricuspid (valve) insufficiency	Diagnosis	ICD-10-CM
I36.2	Nonrheumatic tricuspid (valve) stenosis with insufficiency	Diagnosis	ICD-10-CM
I36.8	Other nonrheumatic tricuspid valve disorders	Diagnosis	ICD-10-CM
I36.9	Nonrheumatic tricuspid valve disorder, unspecified	Diagnosis	ICD-10-CM
I37	Nonrheumatic pulmonary valve disorders	Diagnosis	ICD-10-CM
I37.0	Nonrheumatic pulmonary valve stenosis	Diagnosis	ICD-10-CM
I37.1	Nonrheumatic pulmonary valve insufficiency	Diagnosis	ICD-10-CM
I37.2	Nonrheumatic pulmonary valve stenosis with insufficiency	Diagnosis	ICD-10-CM
I37.8	Other nonrheumatic pulmonary valve disorders	Diagnosis	ICD-10-CM
I37.9	Nonrheumatic pulmonary valve disorder, unspecified	Diagnosis	ICD-10-CM
I38	Endocarditis, valve unspecified	Diagnosis	ICD-10-CM
I39	Endocarditis and heart valve disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
I40	Acute myocarditis	Diagnosis	ICD-10-CM
I40.0	Infective myocarditis	Diagnosis	ICD-10-CM
I40.1	Isolated myocarditis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I40.8	Other acute myocarditis	Diagnosis	ICD-10-CM
I40.9	Acute myocarditis, unspecified	Diagnosis	ICD-10-CM
I41	Myocarditis in diseases classified elsewhere	Diagnosis	ICD-10-CM
I42	Cardiomyopathy	Diagnosis	ICD-10-CM
I42.0	Dilated cardiomyopathy	Diagnosis	ICD-10-CM
I42.1	Obstructive hypertrophic cardiomyopathy	Diagnosis	ICD-10-CM
I42.2	Other hypertrophic cardiomyopathy	Diagnosis	ICD-10-CM
I42.3	Endomyocardial (eosinophilic) disease	Diagnosis	ICD-10-CM
I42.4	Endocardial fibroelastosis	Diagnosis	ICD-10-CM
I42.5	Other restrictive cardiomyopathy	Diagnosis	ICD-10-CM
I42.6	Alcoholic cardiomyopathy	Diagnosis	ICD-10-CM
I42.7	Cardiomyopathy due to drug and external agent	Diagnosis	ICD-10-CM
I42.8	Other cardiomyopathies	Diagnosis	ICD-10-CM
I42.9	Cardiomyopathy, unspecified	Diagnosis	ICD-10-CM
I43	Cardiomyopathy in diseases classified elsewhere	Diagnosis	ICD-10-CM
I44	Atrioventricular and left bundle-branch block	Diagnosis	ICD-10-CM
I44.0	Atrioventricular block, first degree	Diagnosis	ICD-10-CM
I44.1	Atrioventricular block, second degree	Diagnosis	ICD-10-CM
I44.2	Atrioventricular block, complete	Diagnosis	ICD-10-CM
I44.3	Other and unspecified atrioventricular block	Diagnosis	ICD-10-CM
I44.30	Unspecified atrioventricular block	Diagnosis	ICD-10-CM
I44.39	Other atrioventricular block	Diagnosis	ICD-10-CM
I44.4	Left anterior fascicular block	Diagnosis	ICD-10-CM
I44.5	Left posterior fascicular block	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I44.6	Other and unspecified fascicular block	Diagnosis	ICD-10-CM
I44.60	Unspecified fascicular block	Diagnosis	ICD-10-CM
I44.69	Other fascicular block	Diagnosis	ICD-10-CM
I44.7	Left bundle-branch block, unspecified	Diagnosis	ICD-10-CM
I45	Other conduction disorders	Diagnosis	ICD-10-CM
I45.0	Right fascicular block	Diagnosis	ICD-10-CM
I45.1	Other and unspecified right bundle-branch block	Diagnosis	ICD-10-CM
I45.10	Unspecified right bundle-branch block	Diagnosis	ICD-10-CM
I45.19	Other right bundle-branch block	Diagnosis	ICD-10-CM
I45.2	Bifascicular block	Diagnosis	ICD-10-CM
I45.3	Trifascicular block	Diagnosis	ICD-10-CM
I45.4	Nonspecific intraventricular block	Diagnosis	ICD-10-CM
I45.5	Other specified heart block	Diagnosis	ICD-10-CM
I45.6	Pre-excitation syndrome	Diagnosis	ICD-10-CM
I45.8	Other specified conduction disorders	Diagnosis	ICD-10-CM
I45.81	Long QT syndrome	Diagnosis	ICD-10-CM
I45.89	Other specified conduction disorders	Diagnosis	ICD-10-CM
I45.9	Conduction disorder, unspecified	Diagnosis	ICD-10-CM
I46	Cardiac arrest	Diagnosis	ICD-10-CM
I46.2	Cardiac arrest due to underlying cardiac condition	Diagnosis	ICD-10-CM
I46.8	Cardiac arrest due to other underlying condition	Diagnosis	ICD-10-CM
I46.9	Cardiac arrest, cause unspecified	Diagnosis	ICD-10-CM
I47	Paroxysmal tachycardia	Diagnosis	ICD-10-CM
I47.0	Re-entry ventricular arrhythmia	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I47.1	Supraventricular tachycardia	Diagnosis	ICD-10-CM
I47.2	Ventricular tachycardia	Diagnosis	ICD-10-CM
I47.9	Paroxysmal tachycardia, unspecified	Diagnosis	ICD-10-CM
I48	Atrial fibrillation and flutter	Diagnosis	ICD-10-CM
I48.0	Paroxysmal atrial fibrillation	Diagnosis	ICD-10-CM
I48.1	Persistent atrial fibrillation	Diagnosis	ICD-10-CM
I48.11	Longstanding persistent atrial fibrillation	Diagnosis	ICD-10-CM
I48.19	Other persistent atrial fibrillation	Diagnosis	ICD-10-CM
I48.2	Chronic atrial fibrillation	Diagnosis	ICD-10-CM
I48.20	Chronic atrial fibrillation, unspecified	Diagnosis	ICD-10-CM
I48.21	Permanent atrial fibrillation	Diagnosis	ICD-10-CM
I48.3	Typical atrial flutter	Diagnosis	ICD-10-CM
I48.4	Atypical atrial flutter	Diagnosis	ICD-10-CM
I48.9	Unspecified atrial fibrillation and atrial flutter	Diagnosis	ICD-10-CM
I48.91	Unspecified atrial fibrillation	Diagnosis	ICD-10-CM
I48.92	Unspecified atrial flutter	Diagnosis	ICD-10-CM
I49	Other cardiac arrhythmias	Diagnosis	ICD-10-CM
I49.0	Ventricular fibrillation and flutter	Diagnosis	ICD-10-CM
I49.01	Ventricular fibrillation	Diagnosis	ICD-10-CM
I49.02	Ventricular flutter	Diagnosis	ICD-10-CM
I49.1	Atrial premature depolarization	Diagnosis	ICD-10-CM
I49.2	Junctional premature depolarization	Diagnosis	ICD-10-CM
I49.3	Ventricular premature depolarization	Diagnosis	ICD-10-CM
I49.4	Other and unspecified premature depolarization	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I49.40	Unspecified premature depolarization	Diagnosis	ICD-10-CM
I49.49	Other premature depolarization	Diagnosis	ICD-10-CM
I49.5	Sick sinus syndrome	Diagnosis	ICD-10-CM
I49.8	Other specified cardiac arrhythmias	Diagnosis	ICD-10-CM
I49.9	Cardiac arrhythmia, unspecified	Diagnosis	ICD-10-CM
I50	Heart failure	Diagnosis	ICD-10-CM
I50.1	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
I50.2	Systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.20	Unspecified systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.21	Acute systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.22	Chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.23	Acute on chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.3	Diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.30	Unspecified diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.31	Acute diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.32	Chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.33	Acute on chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.4	Combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.40	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.41	Acute combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.42	Chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.43	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.8	Other heart failure	Diagnosis	ICD-10-CM
I50.81	Right heart failure	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I50.810	Right heart failure, unspecified	Diagnosis	ICD-10-CM
I50.811	Acute right heart failure	Diagnosis	ICD-10-CM
I50.812	Chronic right heart failure	Diagnosis	ICD-10-CM
I50.813	Acute on chronic right heart failure	Diagnosis	ICD-10-CM
I50.814	Right heart failure due to left heart failure	Diagnosis	ICD-10-CM
I50.82	Biventricular heart failure	Diagnosis	ICD-10-CM
I50.83	High output heart failure	Diagnosis	ICD-10-CM
I50.84	End stage heart failure	Diagnosis	ICD-10-CM
I50.89	Other heart failure	Diagnosis	ICD-10-CM
I50.9	Heart failure, unspecified	Diagnosis	ICD-10-CM
I51	Complications and ill-defined descriptions of heart disease	Diagnosis	ICD-10-CM
I51.0	Cardiac septal defect, acquired	Diagnosis	ICD-10-CM
I51.1	Rupture of chordae tendineae, not elsewhere classified	Diagnosis	ICD-10-CM
I51.2	Rupture of papillary muscle, not elsewhere classified	Diagnosis	ICD-10-CM
I51.3	Intracardiac thrombosis, not elsewhere classified	Diagnosis	ICD-10-CM
I51.4	Myocarditis, unspecified	Diagnosis	ICD-10-CM
I51.5	Myocardial degeneration	Diagnosis	ICD-10-CM
I51.7	Cardiomegaly	Diagnosis	ICD-10-CM
I51.8	Other ill-defined heart diseases	Diagnosis	ICD-10-CM
I51.81	Takotsubo syndrome	Diagnosis	ICD-10-CM
I51.89	Other ill-defined heart diseases	Diagnosis	ICD-10-CM
I51.9	Heart disease, unspecified	Diagnosis	ICD-10-CM
I52	Other heart disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
I70	Atherosclerosis	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.0	Atherosclerosis of aorta	Diagnosis	ICD-10-CM
I70.1	Atherosclerosis of renal artery	Diagnosis	ICD-10-CM
I70.2	Atherosclerosis of native arteries of the extremities	Diagnosis	ICD-10-CM
I70.20	Unspecified atherosclerosis of native arteries of extremities	Diagnosis	ICD-10-CM
I70.201	Unspecified atherosclerosis of native arteries of extremities, right leg	Diagnosis	ICD-10-CM
I70.202	Unspecified atherosclerosis of native arteries of extremities, left leg	Diagnosis	ICD-10-CM
I70.203	Unspecified atherosclerosis of native arteries of extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.208	Unspecified atherosclerosis of native arteries of extremities, other extremity	Diagnosis	ICD-10-CM
I70.209	Unspecified atherosclerosis of native arteries of extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.21	Atherosclerosis of native arteries of extremities with intermittent claudication	Diagnosis	ICD-10-CM
I70.211	Atherosclerosis of native arteries of extremities with intermittent claudication, right leg	Diagnosis	ICD-10-CM
I70.212	Atherosclerosis of native arteries of extremities with intermittent claudication, left leg	Diagnosis	ICD-10-CM
I70.213	Atherosclerosis of native arteries of extremities with intermittent claudication, bilateral legs	Diagnosis	ICD-10-CM
I70.218	Atherosclerosis of native arteries of extremities with intermittent claudication, other extremity	Diagnosis	ICD-10-CM
I70.219	Atherosclerosis of native arteries of extremities with intermittent claudication, unspecified extremity	Diagnosis	ICD-10-CM
I70.22	Atherosclerosis of native arteries of extremities with rest pain	Diagnosis	ICD-10-CM
I70.221	Atherosclerosis of native arteries of extremities with rest pain, right leg	Diagnosis	ICD-10-CM
I70.222	Atherosclerosis of native arteries of extremities with rest pain, left leg	Diagnosis	ICD-10-CM
I70.223	Atherosclerosis of native arteries of extremities with rest pain, bilateral legs	Diagnosis	ICD-10-CM
I70.228	Atherosclerosis of native arteries of extremities with rest pain, other extremity	Diagnosis	ICD-10-CM
I70.229	Atherosclerosis of native arteries of extremities with rest pain, unspecified extremity	Diagnosis	ICD-10-CM
I70.23	Atherosclerosis of native arteries of right leg with ulceration	Diagnosis	ICD-10-CM
I70.231	Atherosclerosis of native arteries of right leg with ulceration of thigh	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.232	Atherosclerosis of native arteries of right leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.233	Atherosclerosis of native arteries of right leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.234	Atherosclerosis of native arteries of right leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.235	Atherosclerosis of native arteries of right leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.238	Atherosclerosis of native arteries of right leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.239	Atherosclerosis of native arteries of right leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.24	Atherosclerosis of native arteries of left leg with ulceration	Diagnosis	ICD-10-CM
I70.241	Atherosclerosis of native arteries of left leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.242	Atherosclerosis of native arteries of left leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.243	Atherosclerosis of native arteries of left leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.244	Atherosclerosis of native arteries of left leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.245	Atherosclerosis of native arteries of left leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.248	Atherosclerosis of native arteries of left leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.249	Atherosclerosis of native arteries of left leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.25	Atherosclerosis of native arteries of other extremities with ulceration	Diagnosis	ICD-10-CM
I70.26	Atherosclerosis of native arteries of extremities with gangrene	Diagnosis	ICD-10-CM
I70.261	Atherosclerosis of native arteries of extremities with gangrene, right leg	Diagnosis	ICD-10-CM
I70.262	Atherosclerosis of native arteries of extremities with gangrene, left leg	Diagnosis	ICD-10-CM
I70.263	Atherosclerosis of native arteries of extremities with gangrene, bilateral legs	Diagnosis	ICD-10-CM
I70.268	Atherosclerosis of native arteries of extremities with gangrene, other extremity	Diagnosis	ICD-10-CM
I70.269	Atherosclerosis of native arteries of extremities with gangrene, unspecified extremity	Diagnosis	ICD-10-CM
I70.29	Other atherosclerosis of native arteries of extremities	Diagnosis	ICD-10-CM
I70.291	Other atherosclerosis of native arteries of extremities, right leg	Diagnosis	ICD-10-CM
I70.292	Other atherosclerosis of native arteries of extremities, left leg	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.293	Other atherosclerosis of native arteries of extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.298	Other atherosclerosis of native arteries of extremities, other extremity	Diagnosis	ICD-10-CM
I70.299	Other atherosclerosis of native arteries of extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.3	Atherosclerosis of unspecified type of bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.30	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.301	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.302	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.303	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.308	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.309	Unspecified atherosclerosis of unspecified type of bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.31	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication	Diagnosis	ICD-10-CM
I70.311	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, right leg	Diagnosis	ICD-10-CM
I70.312	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, left leg	Diagnosis	ICD-10-CM
I70.313	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, bilateral legs	Diagnosis	ICD-10-CM
I70.318	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, other extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.319	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with intermittent claudication, unspecified extremity	Diagnosis	ICD-10-CM
I70.32	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain	Diagnosis	ICD-10-CM
I70.321	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, right leg	Diagnosis	ICD-10-CM
I70.322	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, left leg	Diagnosis	ICD-10-CM
I70.323	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, bilateral legs	Diagnosis	ICD-10-CM
I70.328	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, other extremity	Diagnosis	ICD-10-CM
I70.329	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with rest pain, unspecified extremity	Diagnosis	ICD-10-CM
I70.33	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration	Diagnosis	ICD-10-CM
I70.331	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.332	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.333	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.334	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.335	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.338	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.339	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.34	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.341	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.342	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.343	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.344	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.345	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.348	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.349	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.35	Atherosclerosis of unspecified type of bypass graft(s) of other extremity with ulceration	Diagnosis	ICD-10-CM
I70.36	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene	Diagnosis	ICD-10-CM
I70.361	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, right leg	Diagnosis	ICD-10-CM
I70.362	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, left leg	Diagnosis	ICD-10-CM
I70.363	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, bilateral legs	Diagnosis	ICD-10-CM
I70.368	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, other extremity	Diagnosis	ICD-10-CM
I70.369	Atherosclerosis of unspecified type of bypass graft(s) of the extremities with gangrene, unspecified extremity	Diagnosis	ICD-10-CM
I70.39	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.391	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.392	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.393	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.398	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.399	Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.4	Atherosclerosis of autologous vein bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.40	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.401	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.402	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.403	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.408	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.409	Unspecified atherosclerosis of autologous vein bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.41	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication	Diagnosis	ICD-10-CM
I70.411	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, right leg	Diagnosis	ICD-10-CM
I70.412	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, left leg	Diagnosis	ICD-10-CM
I70.413	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, bilateral legs	Diagnosis	ICD-10-CM
I70.418	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, other extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.419	Atherosclerosis of autologous vein bypass graft(s) of the extremities with intermittent claudication, unspecified extremity	Diagnosis	ICD-10-CM
I70.42	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain	Diagnosis	ICD-10-CM
I70.421	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, right leg	Diagnosis	ICD-10-CM
I70.422	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, left leg	Diagnosis	ICD-10-CM
I70.423	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, bilateral legs	Diagnosis	ICD-10-CM
I70.428	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, other extremity	Diagnosis	ICD-10-CM
I70.429	Atherosclerosis of autologous vein bypass graft(s) of the extremities with rest pain, unspecified extremity	Diagnosis	ICD-10-CM
I70.43	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration	Diagnosis	ICD-10-CM
I70.431	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.432	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.433	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.434	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.435	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.438	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.439	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.44	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration	Diagnosis	ICD-10-CM
I70.441	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of thigh	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.442	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.443	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.444	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.445	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.448	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.449	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.45	Atherosclerosis of autologous vein bypass graft(s) of other extremity with ulceration	Diagnosis	ICD-10-CM
I70.46	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene	Diagnosis	ICD-10-CM
I70.461	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, right leg	Diagnosis	ICD-10-CM
I70.462	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, left leg	Diagnosis	ICD-10-CM
I70.463	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, bilateral legs	Diagnosis	ICD-10-CM
I70.468	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, other extremity	Diagnosis	ICD-10-CM
I70.469	Atherosclerosis of autologous vein bypass graft(s) of the extremities with gangrene, unspecified extremity	Diagnosis	ICD-10-CM
I70.49	Other atherosclerosis of autologous vein bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.491	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.492	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.493	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.498	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.499	Other atherosclerosis of autologous vein bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.5	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.50	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.501	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.502	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.503	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.508	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.509	Unspecified atherosclerosis of nonautologous biological bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.51	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities intermittent claudication	Diagnosis	ICD-10-CM
I70.511	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, right leg	Diagnosis	ICD-10-CM
I70.512	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, left leg	Diagnosis	ICD-10-CM
I70.513	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, bilateral legs	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.518	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, other extremity	Diagnosis	ICD-10-CM
I70.519	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with intermittent claudication, unspecified extremity	Diagnosis	ICD-10-CM
I70.52	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain	Diagnosis	ICD-10-CM
I70.521	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, right leg	Diagnosis	ICD-10-CM
I70.522	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, left leg	Diagnosis	ICD-10-CM
I70.523	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, bilateral legs	Diagnosis	ICD-10-CM
I70.528	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, other extremity	Diagnosis	ICD-10-CM
I70.529	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with rest pain, unspecified extremity	Diagnosis	ICD-10-CM
I70.53	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration	Diagnosis	ICD-10-CM
I70.531	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.532	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.533	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.534	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.535	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.538	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.539	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.54	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration	Diagnosis	ICD-10-CM
I70.541	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.542	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.543	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.544	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.545	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.548	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.549	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.55	Atherosclerosis of nonautologous biological bypass graft(s) of other extremity with ulceration	Diagnosis	ICD-10-CM
I70.56	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene	Diagnosis	ICD-10-CM
I70.561	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, right leg	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.562	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, left leg	Diagnosis	ICD-10-CM
I70.563	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, bilateral legs	Diagnosis	ICD-10-CM
I70.568	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, other extremity	Diagnosis	ICD-10-CM
I70.569	Atherosclerosis of nonautologous biological bypass graft(s) of the extremities with gangrene, unspecified extremity	Diagnosis	ICD-10-CM
I70.59	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.591	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.592	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.593	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.598	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.599	Other atherosclerosis of nonautologous biological bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.6	Atherosclerosis of nonbiological bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.60	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.601	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.602	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.603	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.608	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.609	Unspecified atherosclerosis of nonbiological bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.61	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication	Diagnosis	ICD-10-CM
I70.611	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, right leg	Diagnosis	ICD-10-CM
I70.612	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, left leg	Diagnosis	ICD-10-CM
I70.613	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, bilateral legs	Diagnosis	ICD-10-CM
I70.618	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, other extremity	Diagnosis	ICD-10-CM
I70.619	Atherosclerosis of nonbiological bypass graft(s) of the extremities with intermittent claudication, unspecified extremity	Diagnosis	ICD-10-CM
I70.62	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain	Diagnosis	ICD-10-CM
I70.621	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, right leg	Diagnosis	ICD-10-CM
I70.622	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, left leg	Diagnosis	ICD-10-CM
I70.623	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, bilateral legs	Diagnosis	ICD-10-CM
I70.628	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, other extremity	Diagnosis	ICD-10-CM
I70.629	Atherosclerosis of nonbiological bypass graft(s) of the extremities with rest pain, unspecified extremity	Diagnosis	ICD-10-CM
I70.63	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration	Diagnosis	ICD-10-CM
I70.631	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.632	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of calf	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.633	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.634	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.635	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.638	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.639	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.64	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration	Diagnosis	ICD-10-CM
I70.641	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.642	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.643	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.644	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.645	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.648	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.649	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.65	Atherosclerosis of nonbiological bypass graft(s) of other extremity with ulceration	Diagnosis	ICD-10-CM
I70.66	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene	Diagnosis	ICD-10-CM
I70.661	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, right leg	Diagnosis	ICD-10-CM
I70.662	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, left leg	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.663	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, bilateral legs	Diagnosis	ICD-10-CM
I70.668	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, other extremity	Diagnosis	ICD-10-CM
I70.669	Atherosclerosis of nonbiological bypass graft(s) of the extremities with gangrene, unspecified extremity	Diagnosis	ICD-10-CM
I70.69	Other atherosclerosis of nonbiological bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.691	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.692	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.693	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.698	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.699	Other atherosclerosis of nonbiological bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.7	Atherosclerosis of other type of bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.70	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.701	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.702	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.703	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.708	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.709	Unspecified atherosclerosis of other type of bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.71	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication	Diagnosis	ICD-10-CM
I70.711	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, right leg	Diagnosis	ICD-10-CM
I70.712	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, left leg	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.713	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, bilateral legs	Diagnosis	ICD-10-CM
I70.718	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, other extremity	Diagnosis	ICD-10-CM
I70.719	Atherosclerosis of other type of bypass graft(s) of the extremities with intermittent claudication, unspecified extremity	Diagnosis	ICD-10-CM
I70.72	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain	Diagnosis	ICD-10-CM
I70.721	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, right leg	Diagnosis	ICD-10-CM
I70.722	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, left leg	Diagnosis	ICD-10-CM
I70.723	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, bilateral legs	Diagnosis	ICD-10-CM
I70.728	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, other extremity	Diagnosis	ICD-10-CM
I70.729	Atherosclerosis of other type of bypass graft(s) of the extremities with rest pain, unspecified extremity	Diagnosis	ICD-10-CM
I70.73	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration	Diagnosis	ICD-10-CM
I70.731	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.732	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.733	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.734	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.735	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.738	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.739	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of unspecified site	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.74	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration	Diagnosis	ICD-10-CM
I70.741	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.742	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.743	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.744	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.745	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.748	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.749	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.75	Atherosclerosis of other type of bypass graft(s) of other extremity with ulceration	Diagnosis	ICD-10-CM
I70.76	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene	Diagnosis	ICD-10-CM
I70.761	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, right leg	Diagnosis	ICD-10-CM
I70.762	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, left leg	Diagnosis	ICD-10-CM
I70.763	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, bilateral legs	Diagnosis	ICD-10-CM
I70.768	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, other extremity	Diagnosis	ICD-10-CM
I70.769	Atherosclerosis of other type of bypass graft(s) of the extremities with gangrene, unspecified extremity	Diagnosis	ICD-10-CM
I70.79	Other atherosclerosis of other type of bypass graft(s) of the extremities	Diagnosis	ICD-10-CM
I70.791	Other atherosclerosis of other type of bypass graft(s) of the extremities, right leg	Diagnosis	ICD-10-CM
I70.792	Other atherosclerosis of other type of bypass graft(s) of the extremities, left leg	Diagnosis	ICD-10-CM
I70.793	Other atherosclerosis of other type of bypass graft(s) of the extremities, bilateral legs	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I70.798	Other atherosclerosis of other type of bypass graft(s) of the extremities, other extremity	Diagnosis	ICD-10-CM
I70.799	Other atherosclerosis of other type of bypass graft(s) of the extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.8	Atherosclerosis of other arteries	Diagnosis	ICD-10-CM
I70.9	Other and unspecified atherosclerosis	Diagnosis	ICD-10-CM
I70.90	Unspecified atherosclerosis	Diagnosis	ICD-10-CM
I70.91	Generalized atherosclerosis	Diagnosis	ICD-10-CM
I70.92	Chronic total occlusion of artery of the extremities	Diagnosis	ICD-10-CM
I71	Aortic aneurysm and dissection	Diagnosis	ICD-10-CM
I71.0	Dissection of aorta	Diagnosis	ICD-10-CM
I71.00	Dissection of unspecified site of aorta	Diagnosis	ICD-10-CM
I71.01	Dissection of thoracic aorta	Diagnosis	ICD-10-CM
I71.02	Dissection of abdominal aorta	Diagnosis	ICD-10-CM
I71.03	Dissection of thoracoabdominal aorta	Diagnosis	ICD-10-CM
I71.1	Thoracic aortic aneurysm, ruptured	Diagnosis	ICD-10-CM
I71.2	Thoracic aortic aneurysm, without rupture	Diagnosis	ICD-10-CM
I71.3	Abdominal aortic aneurysm, ruptured	Diagnosis	ICD-10-CM
I71.4	Abdominal aortic aneurysm, without rupture	Diagnosis	ICD-10-CM
I71.5	Thoracoabdominal aortic aneurysm, ruptured	Diagnosis	ICD-10-CM
I71.6	Thoracoabdominal aortic aneurysm, without rupture	Diagnosis	ICD-10-CM
I71.8	Aortic aneurysm of unspecified site, ruptured	Diagnosis	ICD-10-CM
I71.9	Aortic aneurysm of unspecified site, without rupture	Diagnosis	ICD-10-CM
I72	Other aneurysm	Diagnosis	ICD-10-CM
I72.0	Aneurysm of carotid artery	Diagnosis	ICD-10-CM
I72.1	Aneurysm of artery of upper extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I72.2	Aneurysm of renal artery	Diagnosis	ICD-10-CM
I72.3	Aneurysm of iliac artery	Diagnosis	ICD-10-CM
I72.4	Aneurysm of artery of lower extremity	Diagnosis	ICD-10-CM
I72.5	Aneurysm of other precerebral arteries	Diagnosis	ICD-10-CM
I72.6	Aneurysm of vertebral artery	Diagnosis	ICD-10-CM
I72.8	Aneurysm of other specified arteries	Diagnosis	ICD-10-CM
I72.9	Aneurysm of unspecified site	Diagnosis	ICD-10-CM
I73	Other peripheral Cardiovascular Diseases	Diagnosis	ICD-10-CM
I73.0	Raynaud's syndrome	Diagnosis	ICD-10-CM
I73.00	Raynaud's syndrome without gangrene	Diagnosis	ICD-10-CM
I73.01	Raynaud's syndrome with gangrene	Diagnosis	ICD-10-CM
I73.1	Thromboangiitis obliterans [Buerger's disease]	Diagnosis	ICD-10-CM
I73.8	Other specified peripheral Cardiovascular Diseases	Diagnosis	ICD-10-CM
I73.81	Erythromelalgia	Diagnosis	ICD-10-CM
I73.89	Other specified peripheral Cardiovascular Diseases	Diagnosis	ICD-10-CM
I73.9	Peripheral Cardiovascular Disease, unspecified	Diagnosis	ICD-10-CM
I74	Arterial embolism and thrombosis	Diagnosis	ICD-10-CM
I74.0	Embolism and thrombosis of abdominal aorta	Diagnosis	ICD-10-CM
I74.01	Saddle embolus of abdominal aorta	Diagnosis	ICD-10-CM
I74.09	Other arterial embolism and thrombosis of abdominal aorta	Diagnosis	ICD-10-CM
I74.1	Embolism and thrombosis of other and unspecified parts of aorta	Diagnosis	ICD-10-CM
I74.10	Embolism and thrombosis of unspecified parts of aorta	Diagnosis	ICD-10-CM
I74.11	Embolism and thrombosis of thoracic aorta	Diagnosis	ICD-10-CM
I74.19	Embolism and thrombosis of other parts of aorta	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I74.2	Embolism and thrombosis of arteries of the upper extremities	Diagnosis	ICD-10-CM
I74.3	Embolism and thrombosis of arteries of the lower extremities	Diagnosis	ICD-10-CM
I74.4	Embolism and thrombosis of arteries of extremities, unspecified	Diagnosis	ICD-10-CM
I74.5	Embolism and thrombosis of iliac artery	Diagnosis	ICD-10-CM
I74.8	Embolism and thrombosis of other arteries	Diagnosis	ICD-10-CM
I74.9	Embolism and thrombosis of unspecified artery	Diagnosis	ICD-10-CM
I75	Atheroembolism	Diagnosis	ICD-10-CM
I75.0	Atheroembolism of extremities	Diagnosis	ICD-10-CM
I75.01	Atheroembolism of upper extremity	Diagnosis	ICD-10-CM
I75.011	Atheroembolism of right upper extremity	Diagnosis	ICD-10-CM
I75.012	Atheroembolism of left upper extremity	Diagnosis	ICD-10-CM
I75.013	Atheroembolism of bilateral upper extremities	Diagnosis	ICD-10-CM
I75.019	Atheroembolism of unspecified upper extremity	Diagnosis	ICD-10-CM
I75.02	Atheroembolism of lower extremity	Diagnosis	ICD-10-CM
I75.021	Atheroembolism of right lower extremity	Diagnosis	ICD-10-CM
I75.022	Atheroembolism of left lower extremity	Diagnosis	ICD-10-CM
I75.023	Atheroembolism of bilateral lower extremities	Diagnosis	ICD-10-CM
I75.029	Atheroembolism of unspecified lower extremity	Diagnosis	ICD-10-CM
I75.8	Atheroembolism of other sites	Diagnosis	ICD-10-CM
I75.81	Atheroembolism of kidney	Diagnosis	ICD-10-CM
I75.89	Atheroembolism of other site	Diagnosis	ICD-10-CM
I76	Septic arterial embolism	Diagnosis	ICD-10-CM
I77	Other disorders of arteries and arterioles	Diagnosis	ICD-10-CM
I77.0	Arteriovenous fistula, acquired	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I77.1	Stricture of artery	Diagnosis	ICD-10-CM
I77.2	Rupture of artery	Diagnosis	ICD-10-CM
I77.3	Arterial fibromuscular dysplasia	Diagnosis	ICD-10-CM
I77.4	Celiac artery compression syndrome	Diagnosis	ICD-10-CM
I77.5	Necrosis of artery	Diagnosis	ICD-10-CM
I77.6	Arteritis, unspecified	Diagnosis	ICD-10-CM
I77.7	Other arterial dissection	Diagnosis	ICD-10-CM
I77.70	Dissection of unspecified artery	Diagnosis	ICD-10-CM
I77.71	Dissection of carotid artery	Diagnosis	ICD-10-CM
I77.72	Dissection of iliac artery	Diagnosis	ICD-10-CM
I77.73	Dissection of renal artery	Diagnosis	ICD-10-CM
I77.74	Dissection of vertebral artery	Diagnosis	ICD-10-CM
I77.75	Dissection of other precerebral arteries	Diagnosis	ICD-10-CM
I77.76	Dissection of artery of upper extremity	Diagnosis	ICD-10-CM
I77.77	Dissection of artery of lower extremity	Diagnosis	ICD-10-CM
I77.79	Dissection of other specified artery	Diagnosis	ICD-10-CM
I77.8	Other specified disorders of arteries and arterioles	Diagnosis	ICD-10-CM
I77.81	Aortic ectasia	Diagnosis	ICD-10-CM
I77.810	Thoracic aortic ectasia	Diagnosis	ICD-10-CM
I77.811	Abdominal aortic ectasia	Diagnosis	ICD-10-CM
I77.812	Thoracoabdominal aortic ectasia	Diagnosis	ICD-10-CM
I77.819	Aortic ectasia, unspecified site	Diagnosis	ICD-10-CM
I77.89	Other specified disorders of arteries and arterioles	Diagnosis	ICD-10-CM
I77.9	Disorder of arteries and arterioles, unspecified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I78	Diseases of capillaries	Diagnosis	ICD-10-CM
I78.0	Hereditary hemorrhagic telangiectasia	Diagnosis	ICD-10-CM
I78.1	Nevus, non-neoplastic	Diagnosis	ICD-10-CM
I78.8	Other diseases of capillaries	Diagnosis	ICD-10-CM
I78.9	Disease of capillaries, unspecified	Diagnosis	ICD-10-CM
I79	Disorders of arteries, arterioles and capillaries in diseases classified elsewhere	Diagnosis	ICD-10-CM
I79.0	Aneurysm of aorta in diseases classified elsewhere	Diagnosis	ICD-10-CM
I79.1	Aortitis in diseases classified elsewhere	Diagnosis	ICD-10-CM
I79.8	Other disorders of arteries, arterioles and capillaries in diseases classified elsewhere	Diagnosis	ICD-10-CM
I80	Phlebitis and thrombophlebitis	Diagnosis	ICD-10-CM
I80.0	Phlebitis and thrombophlebitis of superficial vessels of lower extremities	Diagnosis	ICD-10-CM
I80.00	Phlebitis and thrombophlebitis of superficial vessels of unspecified lower extremity	Diagnosis	ICD-10-CM
I80.01	Phlebitis and thrombophlebitis of superficial vessels of right lower extremity	Diagnosis	ICD-10-CM
I80.02	Phlebitis and thrombophlebitis of superficial vessels of left lower extremity	Diagnosis	ICD-10-CM
I80.03	Phlebitis and thrombophlebitis of superficial vessels of lower extremities, bilateral	Diagnosis	ICD-10-CM
I80.1	Phlebitis and thrombophlebitis of femoral vein	Diagnosis	ICD-10-CM
I80.10	Phlebitis and thrombophlebitis of unspecified femoral vein	Diagnosis	ICD-10-CM
I80.11	Phlebitis and thrombophlebitis of right femoral vein	Diagnosis	ICD-10-CM
I80.12	Phlebitis and thrombophlebitis of left femoral vein	Diagnosis	ICD-10-CM
I80.13	Phlebitis and thrombophlebitis of femoral vein, bilateral	Diagnosis	ICD-10-CM
I80.2	Phlebitis and thrombophlebitis of other and unspecified deep vessels of lower extremities	Diagnosis	ICD-10-CM
I80.20	Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities	Diagnosis	ICD-10-CM
I80.201	Phlebitis and thrombophlebitis of unspecified deep vessels of right lower extremity	Diagnosis	ICD-10-CM
I80.202	Phlebitis and thrombophlebitis of unspecified deep vessels of left lower extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I80.203	Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities, bilateral	Diagnosis	ICD-10-CM
I80.209	Phlebitis and thrombophlebitis of unspecified deep vessels of unspecified lower extremity	Diagnosis	ICD-10-CM
I80.21	Phlebitis and thrombophlebitis of iliac vein	Diagnosis	ICD-10-CM
I80.211	Phlebitis and thrombophlebitis of right iliac vein	Diagnosis	ICD-10-CM
I80.212	Phlebitis and thrombophlebitis of left iliac vein	Diagnosis	ICD-10-CM
I80.213	Phlebitis and thrombophlebitis of iliac vein, bilateral	Diagnosis	ICD-10-CM
I80.219	Phlebitis and thrombophlebitis of unspecified iliac vein	Diagnosis	ICD-10-CM
I80.22	Phlebitis and thrombophlebitis of popliteal vein	Diagnosis	ICD-10-CM
I80.221	Phlebitis and thrombophlebitis of right popliteal vein	Diagnosis	ICD-10-CM
I80.222	Phlebitis and thrombophlebitis of left popliteal vein	Diagnosis	ICD-10-CM
I80.223	Phlebitis and thrombophlebitis of popliteal vein, bilateral	Diagnosis	ICD-10-CM
I80.229	Phlebitis and thrombophlebitis of unspecified popliteal vein	Diagnosis	ICD-10-CM
I80.23	Phlebitis and thrombophlebitis of tibial vein	Diagnosis	ICD-10-CM
I80.231	Phlebitis and thrombophlebitis of right tibial vein	Diagnosis	ICD-10-CM
I80.232	Phlebitis and thrombophlebitis of left tibial vein	Diagnosis	ICD-10-CM
I80.233	Phlebitis and thrombophlebitis of tibial vein, bilateral	Diagnosis	ICD-10-CM
I80.239	Phlebitis and thrombophlebitis of unspecified tibial vein	Diagnosis	ICD-10-CM
I80.24	Phlebitis and thrombophlebitis of peroneal vein	Diagnosis	ICD-10-CM
I80.241	Phlebitis and thrombophlebitis of right peroneal vein	Diagnosis	ICD-10-CM
I80.242	Phlebitis and thrombophlebitis of left peroneal vein	Diagnosis	ICD-10-CM
I80.243	Phlebitis and thrombophlebitis of peroneal vein, bilateral	Diagnosis	ICD-10-CM
I80.249	Phlebitis and thrombophlebitis of unspecified peroneal vein	Diagnosis	ICD-10-CM
I80.25	Phlebitis and thrombophlebitis of calf muscular vein	Diagnosis	ICD-10-CM
I80.251	Phlebitis and thrombophlebitis of right calf muscular vein	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I80.252	Phlebitis and thrombophlebitis of left calf muscular vein	Diagnosis	ICD-10-CM
I80.253	Phlebitis and thrombophlebitis of calf muscular vein, bilateral	Diagnosis	ICD-10-CM
I80.259	Phlebitis and thrombophlebitis of unspecified calf muscular vein	Diagnosis	ICD-10-CM
I80.29	Phlebitis and thrombophlebitis of other deep vessels of lower extremities	Diagnosis	ICD-10-CM
I80.291	Phlebitis and thrombophlebitis of other deep vessels of right lower extremity	Diagnosis	ICD-10-CM
I80.292	Phlebitis and thrombophlebitis of other deep vessels of left lower extremity	Diagnosis	ICD-10-CM
I80.293	Phlebitis and thrombophlebitis of other deep vessels of lower extremity, bilateral	Diagnosis	ICD-10-CM
I80.299	Phlebitis and thrombophlebitis of other deep vessels of unspecified lower extremity	Diagnosis	ICD-10-CM
I80.3	Phlebitis and thrombophlebitis of lower extremities, unspecified	Diagnosis	ICD-10-CM
I80.8	Phlebitis and thrombophlebitis of other sites	Diagnosis	ICD-10-CM
I80.9	Phlebitis and thrombophlebitis of unspecified site	Diagnosis	ICD-10-CM
I81	Portal vein thrombosis	Diagnosis	ICD-10-CM
I82	Other venous embolism and thrombosis	Diagnosis	ICD-10-CM
I82.0	Budd-Chiari syndrome	Diagnosis	ICD-10-CM
I82.1	Thrombophlebitis migrans	Diagnosis	ICD-10-CM
I82.2	Embolism and thrombosis of vena cava and other thoracic veins	Diagnosis	ICD-10-CM
I82.21	Embolism and thrombosis of superior vena cava	Diagnosis	ICD-10-CM
I82.210	Acute embolism and thrombosis of superior vena cava	Diagnosis	ICD-10-CM
I82.211	Chronic embolism and thrombosis of superior vena cava	Diagnosis	ICD-10-CM
I82.22	Embolism and thrombosis of inferior vena cava	Diagnosis	ICD-10-CM
I82.220	Acute embolism and thrombosis of inferior vena cava	Diagnosis	ICD-10-CM
I82.221	Chronic embolism and thrombosis of inferior vena cava	Diagnosis	ICD-10-CM
I82.29	Embolism and thrombosis of other thoracic veins	Diagnosis	ICD-10-CM
I82.290	Acute embolism and thrombosis of other thoracic veins	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.291	Chronic embolism and thrombosis of other thoracic veins	Diagnosis	ICD-10-CM
I82.3	Embolism and thrombosis of renal vein	Diagnosis	ICD-10-CM
I82.4	Acute embolism and thrombosis of deep veins of lower extremity	Diagnosis	ICD-10-CM
I82.40	Acute embolism and thrombosis of unspecified deep veins of lower extremity	Diagnosis	ICD-10-CM
I82.401	Acute embolism and thrombosis of unspecified deep veins of right lower extremity	Diagnosis	ICD-10-CM
I82.402	Acute embolism and thrombosis of unspecified deep veins of left lower extremity	Diagnosis	ICD-10-CM
I82.403	Acute embolism and thrombosis of unspecified deep veins of lower extremity, bilateral	Diagnosis	ICD-10-CM
I82.409	Acute embolism and thrombosis of unspecified deep veins of unspecified lower extremity	Diagnosis	ICD-10-CM
I82.41	Acute embolism and thrombosis of femoral vein	Diagnosis	ICD-10-CM
I82.411	Acute embolism and thrombosis of right femoral vein	Diagnosis	ICD-10-CM
I82.412	Acute embolism and thrombosis of left femoral vein	Diagnosis	ICD-10-CM
I82.413	Acute embolism and thrombosis of femoral vein, bilateral	Diagnosis	ICD-10-CM
I82.419	Acute embolism and thrombosis of unspecified femoral vein	Diagnosis	ICD-10-CM
I82.42	Acute embolism and thrombosis of iliac vein	Diagnosis	ICD-10-CM
I82.421	Acute embolism and thrombosis of right iliac vein	Diagnosis	ICD-10-CM
I82.422	Acute embolism and thrombosis of left iliac vein	Diagnosis	ICD-10-CM
I82.423	Acute embolism and thrombosis of iliac vein, bilateral	Diagnosis	ICD-10-CM
I82.429	Acute embolism and thrombosis of unspecified iliac vein	Diagnosis	ICD-10-CM
I82.43	Acute embolism and thrombosis of popliteal vein	Diagnosis	ICD-10-CM
I82.431	Acute embolism and thrombosis of right popliteal vein	Diagnosis	ICD-10-CM
I82.432	Acute embolism and thrombosis of left popliteal vein	Diagnosis	ICD-10-CM
I82.433	Acute embolism and thrombosis of popliteal vein, bilateral	Diagnosis	ICD-10-CM
I82.439	Acute embolism and thrombosis of unspecified popliteal vein	Diagnosis	ICD-10-CM
I82.44	Acute embolism and thrombosis of tibial vein	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.441	Acute embolism and thrombosis of right tibial vein	Diagnosis	ICD-10-CM
I82.442	Acute embolism and thrombosis of left tibial vein	Diagnosis	ICD-10-CM
I82.443	Acute embolism and thrombosis of tibial vein, bilateral	Diagnosis	ICD-10-CM
I82.449	Acute embolism and thrombosis of unspecified tibial vein	Diagnosis	ICD-10-CM
I82.45	Acute embolism and thrombosis of peroneal vein	Diagnosis	ICD-10-CM
I82.451	Acute embolism and thrombosis of right peroneal vein	Diagnosis	ICD-10-CM
I82.452	Acute embolism and thrombosis of left peroneal vein	Diagnosis	ICD-10-CM
I82.453	Acute embolism and thrombosis of peroneal vein, bilateral	Diagnosis	ICD-10-CM
I82.459	Acute embolism and thrombosis of unspecified peroneal vein	Diagnosis	ICD-10-CM
I82.46	Acute embolism and thrombosis of calf muscular vein	Diagnosis	ICD-10-CM
I82.461	Acute embolism and thrombosis of right calf muscular vein	Diagnosis	ICD-10-CM
I82.462	Acute embolism and thrombosis of left calf muscular vein	Diagnosis	ICD-10-CM
I82.463	Acute embolism and thrombosis of calf muscular vein, bilateral	Diagnosis	ICD-10-CM
I82.469	Acute embolism and thrombosis of unspecified calf muscular vein	Diagnosis	ICD-10-CM
I82.49	Acute embolism and thrombosis of other specified deep vein of lower extremity	Diagnosis	ICD-10-CM
I82.491	Acute embolism and thrombosis of other specified deep vein of right lower extremity	Diagnosis	ICD-10-CM
I82.492	Acute embolism and thrombosis of other specified deep vein of left lower extremity	Diagnosis	ICD-10-CM
I82.493	Acute embolism and thrombosis of other specified deep vein of lower extremity, bilateral	Diagnosis	ICD-10-CM
I82.499	Acute embolism and thrombosis of other specified deep vein of unspecified lower extremity	Diagnosis	ICD-10-CM
I82.4Y	Acute embolism and thrombosis of unspecified deep veins of proximal lower extremity	Diagnosis	ICD-10-CM
I82.4Y1	Acute embolism and thrombosis of unspecified deep veins of right proximal lower extremity	Diagnosis	ICD-10-CM
I82.4Y2	Acute embolism and thrombosis of unspecified deep veins of left proximal lower extremity	Diagnosis	ICD-10-CM
I82.4Y3	Acute embolism and thrombosis of unspecified deep veins of proximal lower extremity, bilateral	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.4Y9	Acute embolism and thrombosis of unspecified deep veins of unspecified proximal lower extremity	Diagnosis	ICD-10-CM
I82.4Z	Acute embolism and thrombosis of unspecified deep veins of distal lower extremity	Diagnosis	ICD-10-CM
I82.4Z1	Acute embolism and thrombosis of unspecified deep veins of right distal lower extremity	Diagnosis	ICD-10-CM
I82.4Z2	Acute embolism and thrombosis of unspecified deep veins of left distal lower extremity	Diagnosis	ICD-10-CM
I82.4Z3	Acute embolism and thrombosis of unspecified deep veins of distal lower extremity, bilateral	Diagnosis	ICD-10-CM
I82.4Z9	Acute embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity	Diagnosis	ICD-10-CM
I82.5	Chronic embolism and thrombosis of deep veins of lower extremity	Diagnosis	ICD-10-CM
I82.50	Chronic embolism and thrombosis of unspecified deep veins of lower extremity	Diagnosis	ICD-10-CM
I82.501	Chronic embolism and thrombosis of unspecified deep veins of right lower extremity	Diagnosis	ICD-10-CM
I82.502	Chronic embolism and thrombosis of unspecified deep veins of left lower extremity	Diagnosis	ICD-10-CM
I82.503	Chronic embolism and thrombosis of unspecified deep veins of lower extremity, bilateral	Diagnosis	ICD-10-CM
I82.509	Chronic embolism and thrombosis of unspecified deep veins of unspecified lower extremity	Diagnosis	ICD-10-CM
I82.51	Chronic embolism and thrombosis of femoral vein	Diagnosis	ICD-10-CM
I82.511	Chronic embolism and thrombosis of right femoral vein	Diagnosis	ICD-10-CM
I82.512	Chronic embolism and thrombosis of left femoral vein	Diagnosis	ICD-10-CM
I82.513	Chronic embolism and thrombosis of femoral vein, bilateral	Diagnosis	ICD-10-CM
I82.519	Chronic embolism and thrombosis of unspecified femoral vein	Diagnosis	ICD-10-CM
I82.52	Chronic embolism and thrombosis of iliac vein	Diagnosis	ICD-10-CM
I82.521	Chronic embolism and thrombosis of right iliac vein	Diagnosis	ICD-10-CM
I82.522	Chronic embolism and thrombosis of left iliac vein	Diagnosis	ICD-10-CM
I82.523	Chronic embolism and thrombosis of iliac vein, bilateral	Diagnosis	ICD-10-CM
I82.529	Chronic embolism and thrombosis of unspecified iliac vein	Diagnosis	ICD-10-CM
I82.53	Chronic embolism and thrombosis of popliteal vein	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.531	Chronic embolism and thrombosis of right popliteal vein	Diagnosis	ICD-10-CM
I82.532	Chronic embolism and thrombosis of left popliteal vein	Diagnosis	ICD-10-CM
I82.533	Chronic embolism and thrombosis of popliteal vein, bilateral	Diagnosis	ICD-10-CM
I82.539	Chronic embolism and thrombosis of unspecified popliteal vein	Diagnosis	ICD-10-CM
I82.54	Chronic embolism and thrombosis of tibial vein	Diagnosis	ICD-10-CM
I82.541	Chronic embolism and thrombosis of right tibial vein	Diagnosis	ICD-10-CM
I82.542	Chronic embolism and thrombosis of left tibial vein	Diagnosis	ICD-10-CM
I82.543	Chronic embolism and thrombosis of tibial vein, bilateral	Diagnosis	ICD-10-CM
I82.549	Chronic embolism and thrombosis of unspecified tibial vein	Diagnosis	ICD-10-CM
I82.55	Chronic embolism and thrombosis of peroneal vein	Diagnosis	ICD-10-CM
I82.551	Chronic embolism and thrombosis of right peroneal vein	Diagnosis	ICD-10-CM
I82.552	Chronic embolism and thrombosis of left peroneal vein	Diagnosis	ICD-10-CM
I82.553	Chronic embolism and thrombosis of peroneal vein, bilateral	Diagnosis	ICD-10-CM
I82.559	Chronic embolism and thrombosis of unspecified peroneal vein	Diagnosis	ICD-10-CM
I82.56	Chronic embolism and thrombosis of calf muscular vein	Diagnosis	ICD-10-CM
I82.561	Chronic embolism and thrombosis of right calf muscular vein	Diagnosis	ICD-10-CM
I82.562	Chronic embolism and thrombosis of left calf muscular vein	Diagnosis	ICD-10-CM
I82.563	Chronic embolism and thrombosis of calf muscular vein, bilateral	Diagnosis	ICD-10-CM
I82.569	Chronic embolism and thrombosis of unspecified calf muscular vein	Diagnosis	ICD-10-CM
I82.59	Chronic embolism and thrombosis of other specified deep vein of lower extremity	Diagnosis	ICD-10-CM
I82.591	Chronic embolism and thrombosis of other specified deep vein of right lower extremity	Diagnosis	ICD-10-CM
I82.592	Chronic embolism and thrombosis of other specified deep vein of left lower extremity	Diagnosis	ICD-10-CM
I82.593	Chronic embolism and thrombosis of other specified deep vein of lower extremity, bilateral	Diagnosis	ICD-10-CM
I82.599	Chronic embolism and thrombosis of other specified deep vein of unspecified lower extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.5Y	Chronic embolism and thrombosis of unspecified deep veins of proximal lower extremity	Diagnosis	ICD-10-CM
I82.5Y1	Chronic embolism and thrombosis of unspecified deep veins of right proximal lower extremity	Diagnosis	ICD-10-CM
I82.5Y2	Chronic embolism and thrombosis of unspecified deep veins of left proximal lower extremity	Diagnosis	ICD-10-CM
I82.5Y3	Chronic embolism and thrombosis of unspecified deep veins of proximal lower extremity, bilateral	Diagnosis	ICD-10-CM
I82.5Y9	Chronic embolism and thrombosis of unspecified deep veins of unspecified proximal lower extremity	Diagnosis	ICD-10-CM
I82.5Z	Chronic embolism and thrombosis of unspecified deep veins of distal lower extremity	Diagnosis	ICD-10-CM
I82.5Z1	Chronic embolism and thrombosis of unspecified deep veins of right distal lower extremity	Diagnosis	ICD-10-CM
I82.5Z2	Chronic embolism and thrombosis of unspecified deep veins of left distal lower extremity	Diagnosis	ICD-10-CM
I82.5Z3	Chronic embolism and thrombosis of unspecified deep veins of distal lower extremity, bilateral	Diagnosis	ICD-10-CM
I82.5Z9	Chronic embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity	Diagnosis	ICD-10-CM
I82.6	Acute embolism and thrombosis of veins of upper extremity	Diagnosis	ICD-10-CM
I82.60	Acute embolism and thrombosis of unspecified veins of upper extremity	Diagnosis	ICD-10-CM
I82.601	Acute embolism and thrombosis of unspecified veins of right upper extremity	Diagnosis	ICD-10-CM
I82.602	Acute embolism and thrombosis of unspecified veins of left upper extremity	Diagnosis	ICD-10-CM
I82.603	Acute embolism and thrombosis of unspecified veins of upper extremity, bilateral	Diagnosis	ICD-10-CM
I82.609	Acute embolism and thrombosis of unspecified veins of unspecified upper extremity	Diagnosis	ICD-10-CM
I82.61	Acute embolism and thrombosis of superficial veins of upper extremity	Diagnosis	ICD-10-CM
I82.611	Acute embolism and thrombosis of superficial veins of right upper extremity	Diagnosis	ICD-10-CM
I82.612	Acute embolism and thrombosis of superficial veins of left upper extremity	Diagnosis	ICD-10-CM
I82.613	Acute embolism and thrombosis of superficial veins of upper extremity, bilateral	Diagnosis	ICD-10-CM
I82.619	Acute embolism and thrombosis of superficial veins of unspecified upper extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.62	Acute embolism and thrombosis of deep veins of upper extremity	Diagnosis	ICD-10-CM
I82.621	Acute embolism and thrombosis of deep veins of right upper extremity	Diagnosis	ICD-10-CM
I82.622	Acute embolism and thrombosis of deep veins of left upper extremity	Diagnosis	ICD-10-CM
I82.623	Acute embolism and thrombosis of deep veins of upper extremity, bilateral	Diagnosis	ICD-10-CM
I82.629	Acute embolism and thrombosis of deep veins of unspecified upper extremity	Diagnosis	ICD-10-CM
I82.7	Chronic embolism and thrombosis of veins of upper extremity	Diagnosis	ICD-10-CM
I82.70	Chronic embolism and thrombosis of unspecified veins of upper extremity	Diagnosis	ICD-10-CM
I82.701	Chronic embolism and thrombosis of unspecified veins of right upper extremity	Diagnosis	ICD-10-CM
I82.702	Chronic embolism and thrombosis of unspecified veins of left upper extremity	Diagnosis	ICD-10-CM
I82.703	Chronic embolism and thrombosis of unspecified veins of upper extremity, bilateral	Diagnosis	ICD-10-CM
I82.709	Chronic embolism and thrombosis of unspecified veins of unspecified upper extremity	Diagnosis	ICD-10-CM
I82.71	Chronic embolism and thrombosis of superficial veins of upper extremity	Diagnosis	ICD-10-CM
I82.711	Chronic embolism and thrombosis of superficial veins of right upper extremity	Diagnosis	ICD-10-CM
I82.712	Chronic embolism and thrombosis of superficial veins of left upper extremity	Diagnosis	ICD-10-CM
I82.713	Chronic embolism and thrombosis of superficial veins of upper extremity, bilateral	Diagnosis	ICD-10-CM
I82.719	Chronic embolism and thrombosis of superficial veins of unspecified upper extremity	Diagnosis	ICD-10-CM
I82.72	Chronic embolism and thrombosis of deep veins of upper extremity	Diagnosis	ICD-10-CM
I82.721	Chronic embolism and thrombosis of deep veins of right upper extremity	Diagnosis	ICD-10-CM
I82.722	Chronic embolism and thrombosis of deep veins of left upper extremity	Diagnosis	ICD-10-CM
I82.723	Chronic embolism and thrombosis of deep veins of upper extremity, bilateral	Diagnosis	ICD-10-CM
I82.729	Chronic embolism and thrombosis of deep veins of unspecified upper extremity	Diagnosis	ICD-10-CM
I82.8	Embolism and thrombosis of other specified veins	Diagnosis	ICD-10-CM
I82.81	Embolism and thrombosis of superficial veins of lower extremities	Diagnosis	ICD-10-CM
I82.811	Embolism and thrombosis of superficial veins of right lower extremity	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.812	Embolism and thrombosis of superficial veins of left lower extremity	Diagnosis	ICD-10-CM
I82.813	Embolism and thrombosis of superficial veins of lower extremities, bilateral	Diagnosis	ICD-10-CM
I82.819	Embolism and thrombosis of superficial veins of unspecified lower extremity	Diagnosis	ICD-10-CM
I82.89	Embolism and thrombosis of other specified veins	Diagnosis	ICD-10-CM
I82.890	Acute embolism and thrombosis of other specified veins	Diagnosis	ICD-10-CM
I82.891	Chronic embolism and thrombosis of other specified veins	Diagnosis	ICD-10-CM
I82.9	Embolism and thrombosis of unspecified vein	Diagnosis	ICD-10-CM
I82.90	Acute embolism and thrombosis of unspecified vein	Diagnosis	ICD-10-CM
I82.91	Chronic embolism and thrombosis of unspecified vein	Diagnosis	ICD-10-CM
I82.A	Embolism and thrombosis of axillary vein	Diagnosis	ICD-10-CM
I82.A1	Acute embolism and thrombosis of axillary vein	Diagnosis	ICD-10-CM
I82.A11	Acute embolism and thrombosis of right axillary vein	Diagnosis	ICD-10-CM
I82.A12	Acute embolism and thrombosis of left axillary vein	Diagnosis	ICD-10-CM
I82.A13	Acute embolism and thrombosis of axillary vein, bilateral	Diagnosis	ICD-10-CM
I82.A19	Acute embolism and thrombosis of unspecified axillary vein	Diagnosis	ICD-10-CM
I82.A2	Chronic embolism and thrombosis of axillary vein	Diagnosis	ICD-10-CM
I82.A21	Chronic embolism and thrombosis of right axillary vein	Diagnosis	ICD-10-CM
I82.A22	Chronic embolism and thrombosis of left axillary vein	Diagnosis	ICD-10-CM
I82.A23	Chronic embolism and thrombosis of axillary vein, bilateral	Diagnosis	ICD-10-CM
I82.A29	Chronic embolism and thrombosis of unspecified axillary vein	Diagnosis	ICD-10-CM
I82.B	Embolism and thrombosis of subclavian vein	Diagnosis	ICD-10-CM
I82.B1	Acute embolism and thrombosis of subclavian vein	Diagnosis	ICD-10-CM
I82.B11	Acute embolism and thrombosis of right subclavian vein	Diagnosis	ICD-10-CM
I82.B12	Acute embolism and thrombosis of left subclavian vein	Diagnosis	ICD-10-CM



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I82.B13	Acute embolism and thrombosis of subclavian vein, bilateral	Diagnosis	ICD-10-CM
I82.B19	Acute embolism and thrombosis of unspecified subclavian vein	Diagnosis	ICD-10-CM
I82.B2	Chronic embolism and thrombosis of subclavian vein	Diagnosis	ICD-10-CM
I82.B21	Chronic embolism and thrombosis of right subclavian vein	Diagnosis	ICD-10-CM
I82.B22	Chronic embolism and thrombosis of left subclavian vein	Diagnosis	ICD-10-CM
I82.B23	Chronic embolism and thrombosis of subclavian vein, bilateral	Diagnosis	ICD-10-CM
I82.B29	Chronic embolism and thrombosis of unspecified subclavian vein	Diagnosis	ICD-10-CM
I82.C	Embolism and thrombosis of internal jugular vein	Diagnosis	ICD-10-CM
I82.C1	Acute embolism and thrombosis of internal jugular vein	Diagnosis	ICD-10-CM
I82.C11	Acute embolism and thrombosis of right internal jugular vein	Diagnosis	ICD-10-CM
I82.C12	Acute embolism and thrombosis of left internal jugular vein	Diagnosis	ICD-10-CM
I82.C13	Acute embolism and thrombosis of internal jugular vein, bilateral	Diagnosis	ICD-10-CM
I82.C19	Acute embolism and thrombosis of unspecified internal jugular vein	Diagnosis	ICD-10-CM
I82.C2	Chronic embolism and thrombosis of internal jugular vein	Diagnosis	ICD-10-CM
I82.C21	Chronic embolism and thrombosis of right internal jugular vein	Diagnosis	ICD-10-CM
I82.C22	Chronic embolism and thrombosis of left internal jugular vein	Diagnosis	ICD-10-CM
I82.C23	Chronic embolism and thrombosis of internal jugular vein, bilateral	Diagnosis	ICD-10-CM
I82.C29	Chronic embolism and thrombosis of unspecified internal jugular vein	Diagnosis	ICD-10-CM
I83	Varicose veins of lower extremities	Diagnosis	ICD-10-CM
I83.0	Varicose veins of lower extremities with ulcer	Diagnosis	ICD-10-CM
I83.00	Varicose veins of unspecified lower extremity with ulcer	Diagnosis	ICD-10-CM
I83.001	Varicose veins of unspecified lower extremity with ulcer of thigh	Diagnosis	ICD-10-CM
I83.002	Varicose veins of unspecified lower extremity with ulcer of calf	Diagnosis	ICD-10-CM
I83.003	Varicose veins of unspecified lower extremity with ulcer of ankle	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I83.004	Varicose veins of unspecified lower extremity with ulcer of heel and midfoot	Diagnosis	ICD-10-CM
I83.005	Varicose veins of unspecified lower extremity with ulcer other part of foot	Diagnosis	ICD-10-CM
I83.008	Varicose veins of unspecified lower extremity with ulcer other part of lower leg	Diagnosis	ICD-10-CM
I83.009	Varicose veins of unspecified lower extremity with ulcer of unspecified site	Diagnosis	ICD-10-CM
I83.01	Varicose veins of right lower extremity with ulcer	Diagnosis	ICD-10-CM
I83.011	Varicose veins of right lower extremity with ulcer of thigh	Diagnosis	ICD-10-CM
I83.012	Varicose veins of right lower extremity with ulcer of calf	Diagnosis	ICD-10-CM
I83.013	Varicose veins of right lower extremity with ulcer of ankle	Diagnosis	ICD-10-CM
I83.014	Varicose veins of right lower extremity with ulcer of heel and midfoot	Diagnosis	ICD-10-CM
I83.015	Varicose veins of right lower extremity with ulcer other part of foot	Diagnosis	ICD-10-CM
I83.018	Varicose veins of right lower extremity with ulcer other part of lower leg	Diagnosis	ICD-10-CM
I83.019	Varicose veins of right lower extremity with ulcer of unspecified site	Diagnosis	ICD-10-CM
I83.02	Varicose veins of left lower extremity with ulcer	Diagnosis	ICD-10-CM
I83.021	Varicose veins of left lower extremity with ulcer of thigh	Diagnosis	ICD-10-CM
I83.022	Varicose veins of left lower extremity with ulcer of calf	Diagnosis	ICD-10-CM
I83.023	Varicose veins of left lower extremity with ulcer of ankle	Diagnosis	ICD-10-CM
I83.024	Varicose veins of left lower extremity with ulcer of heel and midfoot	Diagnosis	ICD-10-CM
I83.025	Varicose veins of left lower extremity with ulcer other part of foot	Diagnosis	ICD-10-CM
I83.028	Varicose veins of left lower extremity with ulcer other part of lower leg	Diagnosis	ICD-10-CM
I83.029	Varicose veins of left lower extremity with ulcer of unspecified site	Diagnosis	ICD-10-CM
I83.1	Varicose veins of lower extremities with inflammation	Diagnosis	ICD-10-CM
I83.10	Varicose veins of unspecified lower extremity with inflammation	Diagnosis	ICD-10-CM
I83.11	Varicose veins of right lower extremity with inflammation	Diagnosis	ICD-10-CM
I83.12	Varicose veins of left lower extremity with inflammation	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I83.2	Varicose veins of lower extremities with both ulcer and inflammation	Diagnosis	ICD-10-CM
I83.20	Varicose veins of unspecified lower extremity with both ulcer and inflammation	Diagnosis	ICD-10-CM
I83.201	Varicose veins of unspecified lower extremity with both ulcer of thigh and inflammation	Diagnosis	ICD-10-CM
I83.202	Varicose veins of unspecified lower extremity with both ulcer of calf and inflammation	Diagnosis	ICD-10-CM
I83.203	Varicose veins of unspecified lower extremity with both ulcer of ankle and inflammation	Diagnosis	ICD-10-CM
I83.204	Varicose veins of unspecified lower extremity with both ulcer of heel and midfoot and inflammation	Diagnosis	ICD-10-CM
I83.205	Varicose veins of unspecified lower extremity with both ulcer other part of foot and inflammation	Diagnosis	ICD-10-CM
I83.208	Varicose veins of unspecified lower extremity with both ulcer of other part of lower extremity and inflammation	Diagnosis	ICD-10-CM
I83.209	Varicose veins of unspecified lower extremity with both ulcer of unspecified site and inflammation	Diagnosis	ICD-10-CM
I83.21	Varicose veins of right lower extremity with both ulcer and inflammation	Diagnosis	ICD-10-CM
I83.211	Varicose veins of right lower extremity with both ulcer of thigh and inflammation	Diagnosis	ICD-10-CM
I83.212	Varicose veins of right lower extremity with both ulcer of calf and inflammation	Diagnosis	ICD-10-CM
I83.213	Varicose veins of right lower extremity with both ulcer of ankle and inflammation	Diagnosis	ICD-10-CM
I83.214	Varicose veins of right lower extremity with both ulcer of heel and midfoot and inflammation	Diagnosis	ICD-10-CM
I83.215	Varicose veins of right lower extremity with both ulcer other part of foot and inflammation	Diagnosis	ICD-10-CM
I83.218	Varicose veins of right lower extremity with both ulcer of other part of lower extremity and inflammation	Diagnosis	ICD-10-CM
I83.219	Varicose veins of right lower extremity with both ulcer of unspecified site and inflammation	Diagnosis	ICD-10-CM
I83.22	Varicose veins of left lower extremity with both ulcer and inflammation	Diagnosis	ICD-10-CM
I83.221	Varicose veins of left lower extremity with both ulcer of thigh and inflammation	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I83.222	Varicose veins of left lower extremity with both ulcer of calf and inflammation	Diagnosis	ICD-10-CM
I83.223	Varicose veins of left lower extremity with both ulcer of ankle and inflammation	Diagnosis	ICD-10-CM
I83.224	Varicose veins of left lower extremity with both ulcer of heel and midfoot and inflammation	Diagnosis	ICD-10-CM
I83.225	Varicose veins of left lower extremity with both ulcer other part of foot and inflammation	Diagnosis	ICD-10-CM
I83.228	Varicose veins of left lower extremity with both ulcer of other part of lower extremity and inflammation	Diagnosis	ICD-10-CM
I83.229	Varicose veins of left lower extremity with both ulcer of unspecified site and inflammation	Diagnosis	ICD-10-CM
I83.8	Varicose veins of lower extremities with other complications	Diagnosis	ICD-10-CM
I83.81	Varicose veins of lower extremities with pain	Diagnosis	ICD-10-CM
I83.811	Varicose veins of right lower extremity with pain	Diagnosis	ICD-10-CM
I83.812	Varicose veins of left lower extremity with pain	Diagnosis	ICD-10-CM
I83.813	Varicose veins of bilateral lower extremities with pain	Diagnosis	ICD-10-CM
I83.819	Varicose veins of unspecified lower extremity with pain	Diagnosis	ICD-10-CM
I83.89	Varicose veins of lower extremities with other complications	Diagnosis	ICD-10-CM
I83.891	Varicose veins of right lower extremity with other complications	Diagnosis	ICD-10-CM
I83.892	Varicose veins of left lower extremity with other complications	Diagnosis	ICD-10-CM
I83.893	Varicose veins of bilateral lower extremities with other complications	Diagnosis	ICD-10-CM
I83.899	Varicose veins of unspecified lower extremity with other complications	Diagnosis	ICD-10-CM
I83.9	Asymptomatic varicose veins of lower extremities	Diagnosis	ICD-10-CM
I83.90	Asymptomatic varicose veins of unspecified lower extremity	Diagnosis	ICD-10-CM
I83.91	Asymptomatic varicose veins of right lower extremity	Diagnosis	ICD-10-CM
I83.92	Asymptomatic varicose veins of left lower extremity	Diagnosis	ICD-10-CM
I83.93	Asymptomatic varicose veins of bilateral lower extremities	Diagnosis	ICD-10-CM
I85	Esophageal varices	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I85.0	Esophageal varices	Diagnosis	ICD-10-CM
I85.00	Esophageal varices without bleeding	Diagnosis	ICD-10-CM
I85.01	Esophageal varices with bleeding	Diagnosis	ICD-10-CM
I85.1	Secondary esophageal varices	Diagnosis	ICD-10-CM
I85.10	Secondary esophageal varices without bleeding	Diagnosis	ICD-10-CM
I85.11	Secondary esophageal varices with bleeding	Diagnosis	ICD-10-CM
I86	Varicose veins of other sites	Diagnosis	ICD-10-CM
I86.0	Sublingual varices	Diagnosis	ICD-10-CM
I86.1	Scrotal varices	Diagnosis	ICD-10-CM
I86.2	Pelvic varices	Diagnosis	ICD-10-CM
I86.3	Vulval varices	Diagnosis	ICD-10-CM
I86.4	Gastric varices	Diagnosis	ICD-10-CM
I86.8	Varicose veins of other specified sites	Diagnosis	ICD-10-CM
I87	Other disorders of veins	Diagnosis	ICD-10-CM
I87.0	Postthrombotic syndrome	Diagnosis	ICD-10-CM
I87.00	Postthrombotic syndrome without complications	Diagnosis	ICD-10-CM
I87.001	Postthrombotic syndrome without complications of right lower extremity	Diagnosis	ICD-10-CM
I87.002	Postthrombotic syndrome without complications of left lower extremity	Diagnosis	ICD-10-CM
I87.003	Postthrombotic syndrome without complications of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.009	Postthrombotic syndrome without complications of unspecified extremity	Diagnosis	ICD-10-CM
I87.01	Postthrombotic syndrome with ulcer	Diagnosis	ICD-10-CM
I87.011	Postthrombotic syndrome with ulcer of right lower extremity	Diagnosis	ICD-10-CM
I87.012	Postthrombotic syndrome with ulcer of left lower extremity	Diagnosis	ICD-10-CM
I87.013	Postthrombotic syndrome with ulcer of bilateral lower extremity	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I87.019	Postthrombotic syndrome with ulcer of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.02	Postthrombotic syndrome with inflammation	Diagnosis	ICD-10-CM
I87.021	Postthrombotic syndrome with inflammation of right lower extremity	Diagnosis	ICD-10-CM
I87.022	Postthrombotic syndrome with inflammation of left lower extremity	Diagnosis	ICD-10-CM
I87.023	Postthrombotic syndrome with inflammation of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.029	Postthrombotic syndrome with inflammation of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.03	Postthrombotic syndrome with ulcer and inflammation	Diagnosis	ICD-10-CM
I87.031	Postthrombotic syndrome with ulcer and inflammation of right lower extremity	Diagnosis	ICD-10-CM
I87.032	Postthrombotic syndrome with ulcer and inflammation of left lower extremity	Diagnosis	ICD-10-CM
I87.033	Postthrombotic syndrome with ulcer and inflammation of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.039	Postthrombotic syndrome with ulcer and inflammation of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.09	Postthrombotic syndrome with other complications	Diagnosis	ICD-10-CM
I87.091	Postthrombotic syndrome with other complications of right lower extremity	Diagnosis	ICD-10-CM
I87.092	Postthrombotic syndrome with other complications of left lower extremity	Diagnosis	ICD-10-CM
I87.093	Postthrombotic syndrome with other complications of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.099	Postthrombotic syndrome with other complications of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.1	Compression of vein	Diagnosis	ICD-10-CM
I87.2	Venous insufficiency (chronic) (peripheral)	Diagnosis	ICD-10-CM
I87.3	Chronic venous hypertension (idiopathic)	Diagnosis	ICD-10-CM
I87.30	Chronic venous hypertension (idiopathic) without complications	Diagnosis	ICD-10-CM
I87.301	Chronic venous hypertension (idiopathic) without complications of right lower extremity	Diagnosis	ICD-10-CM
I87.302	Chronic venous hypertension (idiopathic) without complications of left lower extremity	Diagnosis	ICD-10-CM
I87.303	Chronic venous hypertension (idiopathic) without complications of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.309	Chronic venous hypertension (idiopathic) without complications of unspecified lower extremity	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I87.31	Chronic venous hypertension (idiopathic) with ulcer	Diagnosis	ICD-10-CM
I87.311	Chronic venous hypertension (idiopathic) with ulcer of right lower extremity	Diagnosis	ICD-10-CM
I87.312	Chronic venous hypertension (idiopathic) with ulcer of left lower extremity	Diagnosis	ICD-10-CM
I87.313	Chronic venous hypertension (idiopathic) with ulcer of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.319	Chronic venous hypertension (idiopathic) with ulcer of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.32	Chronic venous hypertension (idiopathic) with inflammation	Diagnosis	ICD-10-CM
I87.321	Chronic venous hypertension (idiopathic) with inflammation of right lower extremity	Diagnosis	ICD-10-CM
I87.322	Chronic venous hypertension (idiopathic) with inflammation of left lower extremity	Diagnosis	ICD-10-CM
I87.323	Chronic venous hypertension (idiopathic) with inflammation of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.329	Chronic venous hypertension (idiopathic) with inflammation of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.33	Chronic venous hypertension (idiopathic) with ulcer and inflammation	Diagnosis	ICD-10-CM
I87.331	Chronic venous hypertension (idiopathic) with ulcer and inflammation of right lower extremity	Diagnosis	ICD-10-CM
I87.332	Chronic venous hypertension (idiopathic) with ulcer and inflammation of left lower extremity	Diagnosis	ICD-10-CM
I87.333	Chronic venous hypertension (idiopathic) with ulcer and inflammation of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.339	Chronic venous hypertension (idiopathic) with ulcer and inflammation of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.39	Chronic venous hypertension (idiopathic) with other complications	Diagnosis	ICD-10-CM
I87.391	Chronic venous hypertension (idiopathic) with other complications of right lower extremity	Diagnosis	ICD-10-CM
I87.392	Chronic venous hypertension (idiopathic) with other complications of left lower extremity	Diagnosis	ICD-10-CM
I87.393	Chronic venous hypertension (idiopathic) with other complications of bilateral lower extremity	Diagnosis	ICD-10-CM
I87.399	Chronic venous hypertension (idiopathic) with other complications of unspecified lower extremity	Diagnosis	ICD-10-CM
I87.8	Other specified disorders of veins	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I87.9	Disorder of vein, unspecified	Diagnosis	ICD-10-CM
I88	Nonspecific lymphadenitis	Diagnosis	ICD-10-CM
I88.0	Nonspecific mesenteric lymphadenitis	Diagnosis	ICD-10-CM
I88.1	Chronic lymphadenitis, except mesenteric	Diagnosis	ICD-10-CM
I88.8	Other nonspecific lymphadenitis	Diagnosis	ICD-10-CM
I88.9	Nonspecific lymphadenitis, unspecified	Diagnosis	ICD-10-CM
I89	Other noninfective disorders of lymphatic vessels and lymph nodes	Diagnosis	ICD-10-CM
I89.0	Lymphedema, not elsewhere classified	Diagnosis	ICD-10-CM
I89.1	Lymphangitis	Diagnosis	ICD-10-CM
I89.8	Other specified noninfective disorders of lymphatic vessels and lymph nodes	Diagnosis	ICD-10-CM
I89.9	Noninfective disorder of lymphatic vessels and lymph nodes, unspecified	Diagnosis	ICD-10-CM
I95	Hypotension	Diagnosis	ICD-10-CM
I95.0	Idiopathic hypotension	Diagnosis	ICD-10-CM
I95.1	Orthostatic hypotension	Diagnosis	ICD-10-CM
I95.2	Hypotension due to drugs	Diagnosis	ICD-10-CM
I95.3	Hypotension of hemodialysis	Diagnosis	ICD-10-CM
I95.8	Other hypotension	Diagnosis	ICD-10-CM
I95.81	Postprocedural hypotension	Diagnosis	ICD-10-CM
I95.89	Other hypotension	Diagnosis	ICD-10-CM
I95.9	Hypotension, unspecified	Diagnosis	ICD-10-CM
I96	Gangrene, not elsewhere classified	Diagnosis	ICD-10-CM
I97	Intraoperative and postprocedural complications and disorders of circulatory system, not elsewhere classified	Diagnosis	ICD-10-CM
I97.0	Postcardiotomy syndrome	Diagnosis	ICD-10-CM



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Code	Description	Code Category	Code Type
I97.1	Other postprocedural cardiac functional disturbances	Diagnosis	ICD-10-CM
I97.11	Postprocedural cardiac insufficiency	Diagnosis	ICD-10-CM
I97.110	Postprocedural cardiac insufficiency following cardiac surgery	Diagnosis	ICD-10-CM
I97.111	Postprocedural cardiac insufficiency following other surgery	Diagnosis	ICD-10-CM
I97.12	Postprocedural cardiac arrest	Diagnosis	ICD-10-CM
I97.120	Postprocedural cardiac arrest following cardiac surgery	Diagnosis	ICD-10-CM
I97.121	Postprocedural cardiac arrest following other surgery	Diagnosis	ICD-10-CM
I97.13	Postprocedural heart failure	Diagnosis	ICD-10-CM
I97.130	Postprocedural heart failure following cardiac surgery	Diagnosis	ICD-10-CM
I97.131	Postprocedural heart failure following other surgery	Diagnosis	ICD-10-CM
I97.19	Other postprocedural cardiac functional disturbances	Diagnosis	ICD-10-CM
I97.190	Other postprocedural cardiac functional disturbances following cardiac surgery	Diagnosis	ICD-10-CM
I97.191	Other postprocedural cardiac functional disturbances following other surgery	Diagnosis	ICD-10-CM
I97.2	Postmastectomy lymphedema syndrome	Diagnosis	ICD-10-CM
I97.3	Postprocedural hypertension	Diagnosis	ICD-10-CM
I97.4	Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating a procedure	Diagnosis	ICD-10-CM
I97.41	Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating a circulatory system procedure	Diagnosis	ICD-10-CM
I97.410	Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating a cardiac catheterization	Diagnosis	ICD-10-CM
I97.411	Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating a cardiac bypass	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I97.418	Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating other circulatory system procedure	Diagnosis	ICD-10-CM
I97.42	Intraoperative hemorrhage and hematoma of a circulatory system organ or structure complicating other procedure	Diagnosis	ICD-10-CM
I97.5	Accidental puncture and laceration of a circulatory system organ or structure during a procedure	Diagnosis	ICD-10-CM
I97.51	Accidental puncture and laceration of a circulatory system organ or structure during a circulatory system procedure	Diagnosis	ICD-10-CM
I97.52	Accidental puncture and laceration of a circulatory system organ or structure during other procedure	Diagnosis	ICD-10-CM
I97.6	Postprocedural hemorrhage, hematoma and seroma of a circulatory system organ or structure following a procedure	Diagnosis	ICD-10-CM
I97.61	Postprocedural hemorrhage of a circulatory system organ or structure following a circulatory system procedure	Diagnosis	ICD-10-CM
I97.610	Postprocedural hemorrhage of a circulatory system organ or structure following a cardiac catheterization	Diagnosis	ICD-10-CM
I97.611	Postprocedural hemorrhage of a circulatory system organ or structure following cardiac bypass	Diagnosis	ICD-10-CM
I97.618	Postprocedural hemorrhage of a circulatory system organ or structure following other circulatory system procedure	Diagnosis	ICD-10-CM
I97.62	Postprocedural hemorrhage, hematoma and seroma of a circulatory system organ or structure following other procedure	Diagnosis	ICD-10-CM
I97.620	Postprocedural hemorrhage of a circulatory system organ or structure following other procedure	Diagnosis	ICD-10-CM
I97.621	Postprocedural hematoma of a circulatory system organ or structure following other procedure	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I97.622	Postprocedural seroma of a circulatory system organ or structure following other procedure	Diagnosis	ICD-10-CM
I97.63	Postprocedural hematoma of a circulatory system organ or structure following a circulatory system procedure	Diagnosis	ICD-10-CM
I97.630	Postprocedural hematoma of a circulatory system organ or structure following a cardiac catheterization	Diagnosis	ICD-10-CM
I97.631	Postprocedural hematoma of a circulatory system organ or structure following cardiac bypass	Diagnosis	ICD-10-CM
I97.638	Postprocedural hematoma of a circulatory system organ or structure following other circulatory system procedure	Diagnosis	ICD-10-CM
I97.64	Postprocedural seroma of a circulatory system organ or structure following a circulatory system procedure	Diagnosis	ICD-10-CM
I97.640	Postprocedural seroma of a circulatory system organ or structure following a cardiac catheterization	Diagnosis	ICD-10-CM
I97.641	Postprocedural seroma of a circulatory system organ or structure following cardiac bypass	Diagnosis	ICD-10-CM
I97.648	Postprocedural seroma of a circulatory system organ or structure following other circulatory system procedure	Diagnosis	ICD-10-CM
I97.7	Intraoperative cardiac functional disturbances	Diagnosis	ICD-10-CM
I97.71	Intraoperative cardiac arrest	Diagnosis	ICD-10-CM
I97.710	Intraoperative cardiac arrest during cardiac surgery	Diagnosis	ICD-10-CM
I97.711	Intraoperative cardiac arrest during other surgery	Diagnosis	ICD-10-CM
I97.79	Other intraoperative cardiac functional disturbances	Diagnosis	ICD-10-CM
I97.790	Other intraoperative cardiac functional disturbances during cardiac surgery	Diagnosis	ICD-10-CM
I97.791	Other intraoperative cardiac functional disturbances during other surgery	Diagnosis	ICD-10-CM
I97.8	Other intraoperative and postprocedural complications and disorders of the circulatory system, not elsewhere classified	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
I97.81	Intraoperative cerebrovascular infarction	Diagnosis	ICD-10-CM
I97.810	Intraoperative cerebrovascular infarction during cardiac surgery	Diagnosis	ICD-10-CM
I97.811	Intraoperative cerebrovascular infarction during other surgery	Diagnosis	ICD-10-CM
I97.82	Postprocedural cerebrovascular infarction	Diagnosis	ICD-10-CM
I97.820	Postprocedural cerebrovascular infarction following cardiac surgery	Diagnosis	ICD-10-CM
I97.821	Postprocedural cerebrovascular infarction following other surgery	Diagnosis	ICD-10-CM
I97.88	Other intraoperative complications of the circulatory system, not elsewhere classified	Diagnosis	ICD-10-CM
I97.89	Other postprocedural complications and disorders of the circulatory system, not elsewhere classified	Diagnosis	ICD-10-CM
I99	Other and unspecified disorders of circulatory system	Diagnosis	ICD-10-CM
I99.8	Other disorder of circulatory system	Diagnosis	ICD-10-CM
I99.9	Unspecified disorder of circulatory system	Diagnosis	ICD-10-CM
<b>Adult BMI 19.9 or less</b>			
Z68.1	Body mass index [BMI] 19.9 or less, adult	Diagnosis	ICD-10-CM
<b>Adult BMI 20-29</b>			
Z68.2	Body mass index [BMI] 20-29, adult	Diagnosis	ICD-10-CM
Z68.20	Body mass index [BMI] 20.0-20.9, adult	Diagnosis	ICD-10-CM
Z68.21	Body mass index [BMI] 21.0-21.9, adult	Diagnosis	ICD-10-CM
Z68.22	Body mass index [BMI] 22.0-22.9, adult	Diagnosis	ICD-10-CM
Z68.23	Body mass index [BMI] 23.0-23.9, adult	Diagnosis	ICD-10-CM
Z68.24	Body mass index [BMI] 24.0-24.9, adult	Diagnosis	ICD-10-CM
Z68.25	Body mass index [BMI] 25.0-25.9, adult	Diagnosis	ICD-10-CM
Z68.26	Body mass index [BMI] 26.0-26.9, adult	Diagnosis	ICD-10-CM
Z68.27	Body mass index [BMI] 27.0-27.9, adult	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
Z68.28	Body mass index [BMI] 28.0-28.9, adult	Diagnosis	ICD-10-CM
Z68.29	Body mass index [BMI] 29.0-29.9, adult	Diagnosis	ICD-10-CM
<b>Adult BMI 30-39</b>			
Z68.3	Body mass index [BMI] 30-39, adult	Diagnosis	ICD-10-CM
Z68.30	Body mass index [BMI] 30.0-30.9, adult	Diagnosis	ICD-10-CM
Z68.31	Body mass index [BMI] 31.0-31.9, adult	Diagnosis	ICD-10-CM
Z68.32	Body mass index [BMI] 32.0-32.9, adult	Diagnosis	ICD-10-CM
Z68.33	Body mass index [BMI] 33.0-33.9, adult	Diagnosis	ICD-10-CM
Z68.34	Body mass index [BMI] 34.0-34.9, adult	Diagnosis	ICD-10-CM
Z68.35	Body mass index [BMI] 35.0-35.9, adult	Diagnosis	ICD-10-CM
Z68.36	Body mass index [BMI] 36.0-36.9, adult	Diagnosis	ICD-10-CM
Z68.37	Body mass index [BMI] 37.0-37.9, adult	Diagnosis	ICD-10-CM
Z68.38	Body mass index [BMI] 38.0-38.9, adult	Diagnosis	ICD-10-CM
Z68.39	Body mass index [BMI] 39.0-39.9, adult	Diagnosis	ICD-10-CM
<b>Adult BMI 40 or greater</b>			
Z68.4	Body mass index [BMI] 40 or greater, adult	Diagnosis	ICD-10-CM
Z68.41	Body mass index [BMI] 40.0-44.9, adult	Diagnosis	ICD-10-CM
Z68.42	Body mass index [BMI] 45.0-49.9, adult	Diagnosis	ICD-10-CM
Z68.43	Body mass index [BMI] 50.0-59.9, adult	Diagnosis	ICD-10-CM
Z68.44	Body mass index [BMI] 60.0-69.9, adult	Diagnosis	ICD-10-CM
Z68.45	Body mass index [BMI] 70 or greater, adult	Diagnosis	ICD-10-CM
<b>Chemotherapy</b>			
80169	Everolimus	Procedure	CPT-4
80204	Methotrexate	Procedure	CPT-4

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
A9513	Lutetium Lu 177, dotatate, therapeutic, 1 mCi	Procedure	HCPCS
C1086	Temozolomide, 5 mg, temodar	Procedure	HCPCS
C1167	Injection, epirubicin HCl, 2 mg	Procedure	HCPCS
C1178	Injection, busulfan, per 6 mg	Procedure	HCPCS
C9012	Injection, arsenic trioxide, per 1 mg/kg	Procedure	HCPCS
C9017	Lomustine, 10 mg	Procedure	HCPCS
C9030	Injection, copanlisib, 1 mg	Procedure	HCPCS
C9031	Lutetium Lu 177, dotatate, therapeutic, 1 mCi	Procedure	HCPCS
C9042	Injection, bendamustine HCl (Belrapzo), 1 mg	Procedure	HCPCS
C9064	Mitomycin pyelocalyceal instillation, 1 mg	Procedure	HCPCS
C9065	Injection, romidepsin, non-lyophilized (e.g. liquid), 1 mg	Procedure	HCPCS
C9127	Injection, paclitaxel protein-bound particles, per 1 mg	Procedure	HCPCS
C9129	Injection, clofarabine, per 1 mg	Procedure	HCPCS
C9205	Injection, oxaliplatin, per 5 mg	Procedure	HCPCS
C9207	Injection, bortezomib, per 3.5 mg	Procedure	HCPCS
C9213	Injection, pemetrexed, per 10 mg	Procedure	HCPCS
C9218	Injection, azacitidine, per 1 mg	Procedure	HCPCS
C9231	Injection, decitabine, per 1 mg	Procedure	HCPCS
C9239	Injection, temsirolimus, 1 mg	Procedure	HCPCS
C9240	Injection, ixabepilone, 1 mg	Procedure	HCPCS
C9243	Injection, bendamustine hcl, 1 mg	Procedure	HCPCS
C9253	Injection, temozolomide, 1mg	Procedure	HCPCS
C9259	Injection, pralatrexate, 1 mg	Procedure	HCPCS
C9262	Fludarabine phosphate, oral, 1 mg	Procedure	HCPCS
C9265	Injection, romidepsin, 1 mg	Procedure	HCPCS
C9276	Injection, cabazitaxel, 1 mg	Procedure	HCPCS
C9280	Injection, eribulin mesylate, 1 mg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C9289	Injection, asparaginase Erwinia chrysanthemi, 1,000 IU	Procedure	HCPCS
C9295	Injection, carfilzomib, 1 mg	Procedure	HCPCS
C9296	Injection, ziv-aflibercept, 1 mg	Procedure	HCPCS
C9414	Etoposide; oral, 50 mg, brand name	Procedure	HCPCS
C9415	Doxorubicin HCl, 10 mg, brand name	Procedure	HCPCS
C9417	Bleomycin sulfate, 15 units, brand name	Procedure	HCPCS
C9418	Cisplatin, powder or solution, per 10 mg, brand name	Procedure	HCPCS
C9419	Injection, cladribine, per 1 mg, brand name	Procedure	HCPCS
C9420	Cyclophosphamide, 100 mg, brand name	Procedure	HCPCS
C9421	Cyclophosphamide, lyophilized, 100 mg, brand name	Procedure	HCPCS
C9422	Cytarabine, 100 mg, brand name	Procedure	HCPCS
C9423	Dacarbazine, 100 mg, brand name	Procedure	HCPCS
C9424	Daunorubicin, 10 mg	Procedure	HCPCS
C9425	Etoposide, 10 mg, brand name	Procedure	HCPCS
C9426	Floxuridine, 500 mg, brand name	Procedure	HCPCS
C9429	Idarubicin HCl, 5 mg, brand name	Procedure	HCPCS
C9431	Paclitaxel, 30 mg, brand name	Procedure	HCPCS
C9432	Mitomycin, 5 mg, brand name	Procedure	HCPCS
C9433	Thiotepa, 15 mg, brand name	Procedure	HCPCS
C9437	Carmustine, brand name, 100 mg	Procedure	HCPCS
C9440	Vinorelbine tartrate, brand name, per 10 mg	Procedure	HCPCS
C9442	Injection, belinostat, 10 mg	Procedure	HCPCS
C9474	Injection, irinotecan liposome, 1 mg	Procedure	HCPCS
C9480	Injection, trabectedin, 0.1 mg	Procedure	HCPCS
J0594	Injection, busulfan, 1 mg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J0894	Injection, decitabine, 1 mg	Procedure	HCPCS
J7315	Mitomycin, ophthalmic, 0.2 mg	Procedure	HCPCS
J7527	Everolimus, oral, 0.25 mg	Procedure	HCPCS
J8510	Busulfan, oral, 2 mg	Procedure	HCPCS
J8520	Capecitabine, oral, 150 mg	Procedure	HCPCS
J8521	Capecitabine, oral, 500 mg	Procedure	HCPCS
J8560	Etoposide, oral, 50 mg	Procedure	HCPCS
J8561	Everolimus, oral, 0.25 mg	Procedure	HCPCS
J8562	Fludarabine phosphate, oral, 10 mg	Procedure	HCPCS
J8565	Gefitinib, oral, 250 mg	Procedure	HCPCS
J8600	Melphalan, oral, 2 mg	Procedure	HCPCS
J8610	Methotrexate, oral, 2.5 mg	Procedure	HCPCS
J8700	Temozolomide, oral, 5 mg	Procedure	HCPCS
J8705	Topotecan, oral, 0.25 mg	Procedure	HCPCS
J9000	Injection, doxorubicin HCl, 10 mg	Procedure	HCPCS
J9001	Injection, doxorubicin HCl, all lipid formulations, 10 mg	Procedure	HCPCS
J9002	Injection, doxorubicin hydrochloride, liposomal, Doxil, 10 mg	Procedure	HCPCS
J9017	Injection, arsenic trioxide, 1 mg	Procedure	HCPCS
J9019	Injection, asparaginase (Erwinaze), 1,000 IU	Procedure	HCPCS
J9020	Injection, asparaginase, not otherwise specified, 10,000 units	Procedure	HCPCS
J9025	Injection, azacitidine, 1 mg	Procedure	HCPCS
J9027	Injection, clofarabine, 1 mg	Procedure	HCPCS
J9032	Injection, belinostat, 10 mg	Procedure	HCPCS
J9033	Injection, bendamustine HCl (Treanda), 1 mg	Procedure	HCPCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J9034	Injection, bendamustine HCl (Bendeka), 1 mg	Procedure	HCPCS
J9036	Injection, bendamustine hydrochloride, (Belrapzo/bendamustine), 1 mg	Procedure	HCPCS
J9040	Injection, bleomycin sulfate, 15 units	Procedure	HCPCS
J9041	Injection, bortezomib (Velcade), 0.1 mg	Procedure	HCPCS
J9043	Injection, cabazitaxel, 1 mg	Procedure	HCPCS
J9044	Injection, bortezomib, not otherwise specified, 0.1 mg	Procedure	HCPCS
J9045	Injection, carboplatin, 50 mg	Procedure	HCPCS
J9047	Injection, carfilzomib, 1 mg	Procedure	HCPCS
J9050	Injection, carmustine, 100 mg	Procedure	HCPCS
J9057	Injection, copanlisib, 1 mg	Procedure	HCPCS
J9060	Injection, cisplatin, powder or solution, 10 mg	Procedure	HCPCS
J9062	Cisplatin, 50 mg	Procedure	HCPCS
J9065	Injection, cladribine, per 1 mg	Procedure	HCPCS
J9070	Cyclophosphamide, 100 mg	Procedure	HCPCS
J9080	Cyclophosphamide, 200 mg	Procedure	HCPCS
J9090	Cyclophosphamide, 500 mg	Procedure	HCPCS
J9091	Cyclophosphamide, 1 g	Procedure	HCPCS
J9092	Cyclophosphamide, 2 g	Procedure	HCPCS
J9093	Cyclophosphamide, lyophilized, 100 mg	Procedure	HCPCS
J9094	Cyclophosphamide, lyophilized, 200 mg	Procedure	HCPCS
J9095	Cyclophosphamide, lyophilized, 500 mg	Procedure	HCPCS
J9096	Cyclophosphamide, lyophilized, 1 g	Procedure	HCPCS
J9097	Cyclophosphamide, lyophilized, 2 g	Procedure	HCPCS
J9098	Injection, cytarabine liposome, 10 mg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J9100	Injection, cytarabine, 100 mg	Procedure	HCPCS
J9110	Injection, cytarabine, 500 mg	Procedure	HCPCS
J9118	Injection, calaspargase pegol-mknl, 10 units	Procedure	HCPCS
J9120	Injection, dactinomycin, 0.5 mg	Procedure	HCPCS
J9130	Dacarbazine, 100 mg	Procedure	HCPCS
J9140	Dacarbazine, 200 mg	Procedure	HCPCS
J9150	Injection, daunorubicin, 10 mg	Procedure	HCPCS
J9151	Injection, daunorubicin citrate, liposomal formulation, 10 mg	Procedure	HCPCS
J9170	Injection, docetaxel, 20 mg	Procedure	HCPCS
J9171	Injection, docetaxel, 1 mg	Procedure	HCPCS
J9178	Injection, epirubicin HCl, 2 mg	Procedure	HCPCS
J9179	Injection, eribulin mesylate, 0.1 mg	Procedure	HCPCS
J9180	Epirubicin HCl, 50 mg	Procedure	HCPCS
J9181	Injection, etoposide, 10 mg	Procedure	HCPCS
J9182	Etoposide, 100 mg	Procedure	HCPCS
J9185	Injection, fludarabine phosphate, 50 mg	Procedure	HCPCS
J9190	Injection, fluorouracil, 500 mg	Procedure	HCPCS
J9198	Injection, gemcitabine hydrochloride, (Infugem), 100 mg	Procedure	HCPCS
J9199	Injection, gemcitabine HCl (Infugem), 200 mg	Procedure	HCPCS
J9200	Injection, floxuridine, 500 mg	Procedure	HCPCS
J9201	Injection, gemcitabine HCl, not otherwise specified, 200 mg	Procedure	HCPCS
J9205	Injection, irinotecan liposome, 1 mg	Procedure	HCPCS
J9206	Injection, irinotecan, 20 mg	Procedure	HCPCS
J9207	Injection, ixabepilone, 1 mg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J9208	Injection, ifosfamide, 1 g	Procedure	HCPCS
J9211	Injection, idarubicin HCl, 5 mg	Procedure	HCPCS
J9223	Injection, lurbinectedin, 0.1 mg	Procedure	HCPCS
J9230	Injection, mechlorethamine HCl, (nitrogen mustard), 10 mg	Procedure	HCPCS
J9245	Injection, melphalan hydrochloride, not otherwise specified, 50 mg	Procedure	HCPCS
J9246	Injection, melphalan (Evomela), 1 mg	Procedure	HCPCS
J9250	Methotrexate sodium, 5 mg	Procedure	HCPCS
J9260	Methotrexate sodium, 50 mg	Procedure	HCPCS
J9261	Injection, nelarabine, 50 mg	Procedure	HCPCS
J9262	Injection, omacetaxine mepesuccinate, 0.01 mg	Procedure	HCPCS
J9263	Injection, oxaliplatin, 0.5 mg	Procedure	HCPCS
J9264	Injection, paclitaxel protein-bound particles, 1 mg	Procedure	HCPCS
J9265	Injection, paclitaxel, 30 mg	Procedure	HCPCS
J9267	Injection, paclitaxel, 1 mg	Procedure	HCPCS
J9270	Injection, plicamycin, 2.5 mg	Procedure	HCPCS
J9280	Injection, mitomycin, 5 mg	Procedure	HCPCS
J9290	Mitomycin, 20 mg	Procedure	HCPCS
J9291	Mitomycin, 40 mg	Procedure	HCPCS
J9293	Injection, mitoxantrone HCl, per 5 mg	Procedure	HCPCS
J9304	Injection, pemetrexed (Pemfexy), 10 mg	Procedure	HCPCS
J9305	Injection, pemetrexed, NOS, 10 mg	Procedure	HCPCS
J9307	Injection, pralatrexate, 1 mg	Procedure	HCPCS
J9315	Injection, romidepsin, 1 mg	Procedure	HCPCS
J9320	Injection, streptozocin, 1 g	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J9328	Injection, temozolomide, 1 mg	Procedure	HCPCS
J9330	Injection, temsirolimus, 1 mg	Procedure	HCPCS
J9340	Injection, thiotepa, 15 mg	Procedure	HCPCS
J9350	Injection, topotecan, 4 mg	Procedure	HCPCS
J9351	Injection, topotecan, 0.1 mg	Procedure	HCPCS
J9352	Injection, trabectedin, 0.1 mg	Procedure	HCPCS
J9357	Injection, valrubicin, intravesical, 200 mg	Procedure	HCPCS
J9360	Injection, vinblastine sulfate, 1 mg	Procedure	HCPCS
J9370	Vincristine sulfate, 1 mg	Procedure	HCPCS
J9371	Injection, vincristine sulfate liposome, 1 mg	Procedure	HCPCS
J9375	Vincristine sulfate, 2 mg	Procedure	HCPCS
J9380	Vincristine sulfate, 5 mg	Procedure	HCPCS
J9390	Injection, vinorelbine tartrate, 10 mg	Procedure	HCPCS
J9400	Injection, ziv-aflibercept, 1 mg	Procedure	HCPCS
J9600	Injection, porfimer sodium, 75 mg	Procedure	HCPCS
Q2017	Injection, teniposide, 50 mg	Procedure	HCPCS
Q2025	Fludarabine phosphate, oral, 1 mg	Procedure	HCPCS
Q2048	Injection, doxorubicin hydrochloride, liposomal, DOXIL, 10 mg	Procedure	HCPCS
Q2050	Injection, doxorubicin HCl, liposomal, not otherwise specified, 10 mg	Procedure	HCPCS
S0088	Imatinib, 100 mg	Procedure	HCPCS
S0108	Mercaptopurine, oral, 50 mg	Procedure	HCPCS
S0115	Bortezomib, 3.5 mg	Procedure	HCPCS
S0168	Injection, azacitidine, 100 mg	Procedure	HCPCS
S0172	Chlorambucil, oral, 2 mg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
S0176	Hydroxyurea, oral, 500 mg	Procedure	HCPCS
S0178	Lomustine, oral, 10 mg	Procedure	HCPCS
S0182	Procarbazine HCl, oral, 50 mg	Procedure	HCPCS
<b>Glucocorticoids - Systemic</b>			
J0702	Injection, betamethasone acetate 3 mg and betamethasone sodium phosphate 3 mg	Procedure	HCPCS
J1020	Injection, methylprednisolone acetate, 20 mg	Procedure	HCPCS
J1030	Injection, methylprednisolone acetate, 40 mg	Procedure	HCPCS
J1040	Injection, methylprednisolone acetate, 80 mg	Procedure	HCPCS
J1094	Injection, dexamethasone acetate, 1 mg	Procedure	HCPCS
J1100	Injection, dexamethasone sodium phosphate, 1 mg	Procedure	HCPCS
J1700	Injection, hydrocortisone acetate, up to 25 mg	Procedure	HCPCS
J1710	Injection, hydrocortisone sodium phosphate, up to 50 mg	Procedure	HCPCS
J1720	Injection, hydrocortisone sodium succinate, up to 100 mg	Procedure	HCPCS
J2650	Injection, prednisolone acetate, up to 1 ml	Procedure	HCPCS
J2920	Injection, methylprednisolone sodium succinate, up to 40 mg	Procedure	HCPCS
J2930	Injection, methylprednisolone sodium succinate, up to 125 mg	Procedure	HCPCS
J3300	Injection, triamcinolone acetonide, preservative free, 1 mg	Procedure	HCPCS
J3301	Injection, triamcinolone acetonide, not otherwise specified, 10 mg	Procedure	HCPCS
J3302	Injection, triamcinolone diacetate, per 5 mg	Procedure	HCPCS
J3303	Injection, triamcinolone hexacetonide, per 5 mg	Procedure	HCPCS
J3304	Injection, triamcinolone acetonide, preservative-free, extended-release, microsphere formulation, 1 mg	Procedure	HCPCS
J7401	Mometasone furoate sinus implant, 10 micrograms	Procedure	HCPCS
J7509	Methylprednisolone, oral, per 4 mg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J7510	Prednisolone, oral, per 5 mg	Procedure	HCPCS
J7512	Prednisone, immediate release or delayed release, oral, 1 mg	Procedure	HCPCS
J7622	Beclomethasone, inhalation solution, compounded product, administered through dme, unit dose form, per milligram	Procedure	HCPCS
J7624	BETAMETHASONE, INHALATION SOLUTION ADMINISTERED THROUGH DME, UNIT DOSE FORM, PER MILLIGRAM	Procedure	HCPCS
J7626	Budesonide, inhalation solution, fda-approved final product, non-compounded, administered through dme, unit dose form, up to 0.5 mg	Procedure	HCPCS
J7627	Budesonide, inhalation solution, compounded product, administered through dme, unit dose form, up to 0.5 mg	Procedure	HCPCS
J7633	Budesonide, inhalation solution, fda-approved final product, non-compounded, administered through dme, concentrated form, per 0.25 milligram	Procedure	HCPCS
J7634	Budesonide, inhalation solution, compounded product, administered through dme, concentrated form, per 0.25 milligram	Procedure	HCPCS
J7637	Dexamethasone, inhalation solution, compounded product, administered through dme, concentrated form, per milligram	Procedure	HCPCS
J7638	Dexamethasone, inhalation solution, compounded product, administered through dme, unit dose form, per milligram	Procedure	HCPCS
J7641	Flunisolide, inhalation solution, compounded product, administered through dme, unit dose, per milligram	Procedure	HCPCS
J7683	Triamcinolone, inhalation solution, compounded product, administered through dme, concentrated form, per milligram	Procedure	HCPCS
J7684	Triamcinolone, inhalation solution, compounded product, administered through dme, unit dose form, per milligram	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J8540	Dexamethasone, oral, 0.25 mg	Procedure	HCPCS
<b>Immune Modulators</b>			
80145	Adalimumab	Procedure	CPT-4
80158	Cyclosporine	Procedure	CPT-4
80195	Sirolimus	Procedure	CPT-4
80197	Tacrolimus	Procedure	CPT-4
80230	Infliximab	Procedure	CPT-4
90585	Bacillus Calmette-Guerin vaccine (BCG) for tuberculosis, live, for percutaneous use	Procedure	CPT-4
90586	Bacillus Calmette-Guerin vaccine (BCG) for bladder cancer, live, for intravesical use	Procedure	CPT-4
90728	IMMUNIZ ACTIVE; BCG VACCINE	Procedure	CPT-4
A9544	Iodine I-131 tositumomab, diagnostic, per study dose	Procedure	HCPCS
A9545	Iodine I-131 tositumomab, therapeutic, per treatment dose	Procedure	HCPCS
C1084	Denileukin diftitox, 300 mcg, ontak iv	Procedure	HCPCS
C9003	Palivizumab-RSV-IgM, per 50 mg	Procedure	HCPCS
C9004	Injection, gemtuzumab ozogamicin, per 5 mg	Procedure	HCPCS
C9006	Injection, tacrolimus, per 5 mg (1 amp)	Procedure	HCPCS
C9020	Sirolimus tablet, 1 mg	Procedure	HCPCS
C9021	Injection, obinutuzumab, 10 mg	Procedure	HCPCS
C9025	Injection, ramucirumab, 5 mg	Procedure	HCPCS
C9027	Injection, pembrolizumab, 1 mg	Procedure	HCPCS
C9028	Injection, inotuzumab ozogamicin, 0.1 mg	Procedure	HCPCS
C9029	Injection, guselkumab, 1 mg	Procedure	HCPCS
C9038	Injection, mogamulizumab-kpkc, 1 mg	Procedure	HCPCS
C9044	Injection, cemiplimab-rwlc, 1 mg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C9049	Injection, tagraxofusp-erzs, 10 mcg	Procedure	HCPCS
C9062	Injection, daratumumab 10 mg and hyaluronidase-fihj	Procedure	HCPCS
C9070	Injection, tafasitamab-cxix, 2 mg	Procedure	HCPCS
C9106	Sirolimus, per 1 mg/ml	Procedure	HCPCS
C9119	Injection, pegfilgrastim, per 6 mg single dose vial	Procedure	HCPCS
C9126	Injection natalizumab per 5 mg	Procedure	HCPCS
C9131	Injection, ado-trastuzumab emtansine, 1 mg	Procedure	HCPCS
C9211	Injection, alefacept, for intravenous use, per 7.5 mg	Procedure	HCPCS
C9212	Injection, alefacept, for intramuscular use, per 7.5 mg	Procedure	HCPCS
C9214	Injection, bevacizumab, per 10 mg	Procedure	HCPCS
C9215	Injection, cetuximab, per 10 mg	Procedure	HCPCS
C9230	Injection, abatacept, per 10 mg	Procedure	HCPCS
C9235	Injection, panitumumab, 10 mg	Procedure	HCPCS
C9236	Injection, eculizumab, 10 mg	Procedure	HCPCS
C9239	Injection, temsirolimus, 1 mg	Procedure	HCPCS
C9249	Injection, certolizumab pegol, 1 mg	Procedure	HCPCS
C9257	Injection, bevacizumab, 0.25 mg	Procedure	HCPCS
C9260	Injection, ofatumumab, 10 mg	Procedure	HCPCS
C9261	Injection, ustekinumab, 1 mg	Procedure	HCPCS
C9264	Injection, tocilizumab, 1 mg	Procedure	HCPCS
C9272	Injection, denosumab, 1 mg	Procedure	HCPCS
C9273	Sipuleucel-T, minimum of 50 million autologous CD54+ cells activated with PAP-GM-CSF, including leukapheresis and all other preparatory procedures, per infusion	Procedure	HCPCS
C9284	Injection, ipilimumab, 1 mg	Procedure	HCPCS



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C9286	Injection, belatacept, 1 mg	Procedure	HCPCS
C9287	Injection, brentuximab vedotin, 1 mg	Procedure	HCPCS
C9292	Injection, pertuzumab, 10 mg	Procedure	HCPCS
C9416	BCG (intravesical) per instillation, brand name	Procedure	HCPCS
C9436	Azathioprine, parenteral, brand name, per 100 mg	Procedure	HCPCS
C9438	Cyclosporine, oral, 100 mg, brand name	Procedure	HCPCS
C9449	Injection, blinatumomab, 1 mcg	Procedure	HCPCS
C9453	Injection, nivolumab, 1 mg	Procedure	HCPCS
C9455	Injection, siltuximab, 10 mg	Procedure	HCPCS
C9466	Injection, benralizumab, 1 mg	Procedure	HCPCS
C9467	Injection, rituximab and hyaluronidase, 10 mg	Procedure	HCPCS
C9473	Injection, mepolizumab, 1 mg	Procedure	HCPCS
C9475	Injection, necitumumab, 1 mg	Procedure	HCPCS
C9476	Injection, daratumumab, 10 mg	Procedure	HCPCS
C9477	Injection, elotuzumab, 1 mg	Procedure	HCPCS
C9481	Injection, reslizumab, 1 mg	Procedure	HCPCS
C9483	Injection, atezolizumab, 10 mg	Procedure	HCPCS
C9485	Injection, olaratumab, 10 mg	Procedure	HCPCS
C9487	Ustekinumab, for intravenous injection, 1 mg	Procedure	HCPCS
C9491	Injection, avelumab, 10 mg	Procedure	HCPCS
C9492	Injection, durvalumab, 10 mg	Procedure	HCPCS
G3001	Administration and supply of tositumomab, 450 mg	Procedure	HCPCS
J0129	Injection, abatacept, 10 mg (code may be used for Medicare when drug administered under the direct supervision of a physician, not for use when drug is self-administered)	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J0135	Injection, adalimumab, 20 mg	Procedure	HCPCS
J0215	Injection, alefacept, 0.5 mg	Procedure	HCPCS
J0480	Injection, basiliximab, 20 mg	Procedure	HCPCS
J0485	Injection, belatacept, 1 mg	Procedure	HCPCS
J0490	Injection, belimumab, 10 mg	Procedure	HCPCS
J0517	Injection, benralizumab, 1 mg	Procedure	HCPCS
J0638	Injection, canakinumab, 1 mg	Procedure	HCPCS
J0717	Injection, certolizumab pegol, 1 mg (code may be used for Medicare when drug administered under the direct supervision of a physician, not for use when drug is self-administered)	Procedure	HCPCS
J0718	Injection, certolizumab pegol, 1 mg	Procedure	HCPCS
J0896	Injection, luspatercept-aamt, 0.25 mg	Procedure	HCPCS
J0897	Injection, denosumab, 1 mg	Procedure	HCPCS
J1300	Injection, eculizumab, 10 mg	Procedure	HCPCS
J1438	Injection, etanercept, 25 mg (code may be used for Medicare when drug administered under the direct supervision of a physician, not for use when drug is self-administered)	Procedure	HCPCS
J1440	Injection, filgrastim (G-CSF), 300 mcg	Procedure	HCPCS
J1441	Injection, filgrastim (G-CSF), 480 mcg	Procedure	HCPCS
J1442	Injection, filgrastim (G-CSF), excludes biosimilars, 1 mcg	Procedure	HCPCS
J1446	Injection, TBO-filgrastim, 5 micrograms	Procedure	HCPCS
J1447	Injection, tbo-filgrastim, 1 mcg	Procedure	HCPCS
J1602	Injection, golimumab, 1 mg, for intravenous use	Procedure	HCPCS
J1628	Injection, guselkumab, 1 mg	Procedure	HCPCS
J1745	Injection, infliximab, excludes biosimilar, 10 mg	Procedure	HCPCS
J1825	Injection, interferon beta-1a, 33 mcg	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
J1826	Injection, interferon beta-1a, 30 mcg	Procedure	HCPCS
J1830	Injection interferon beta-1b, 0.25 mg (code may be used for Medicare when drug administered under the direct supervision of a physician, not for use when drug is self-administered)	Procedure	HCPCS
J2182	Injection, mepolizumab, 1 mg	Procedure	HCPCS
J2323	Injection, natalizumab, 1 mg	Procedure	HCPCS
J2425	Injection, palifermin, 50 mcg	Procedure	HCPCS
J2504	Injection, pegademase bovine, 25 IU	Procedure	HCPCS
J2505	Injection, pegfilgrastim, 6 mg	Procedure	HCPCS
J2786	Injection, reslizumab, 1 mg	Procedure	HCPCS
J2793	Injection, rilonacept, 1 mg	Procedure	HCPCS
J2820	Injection, sargramostim (GM-CSF), 50 mcg	Procedure	HCPCS
J2860	Injection, siltuximab, 10 mg	Procedure	HCPCS
J2910	Injection, aurothioglucose, up to 50 mg	Procedure	HCPCS
J3245	Injection, tildrakizumab, 1 mg	Procedure	HCPCS
J3262	Injection, tocilizumab, 1 mg	Procedure	HCPCS
J3357	Ustekinumab, for subcutaneous injection, 1 mg	Procedure	HCPCS
J3358	Ustekinumab, for intravenous injection, 1 mg	Procedure	HCPCS
J7500	Azathioprine, oral, 50 mg	Procedure	HCPCS
J7501	Azathioprine, parenteral, 100 mg	Procedure	HCPCS
J7502	Cyclosporine, oral, 100 mg	Procedure	HCPCS
J7503	Tacrolimus, extended release, (Envarsus XR), oral, 0.25 mg	Procedure	HCPCS
J7507	Tacrolimus, immediate release, oral, 1 mg	Procedure	HCPCS
J7508	Tacrolimus, extended release, (Astagraf XL), oral, 0.1 mg	Procedure	HCPCS
J7513	Daclizumab, parenteral, 25 mg	Procedure	HCPCS

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Code	Description	Code Category	Code Type
J7515	Cyclosporine, oral, 25 mg	Procedure	HCPCS
J7516	Cyclosporine, parenteral, 250 mg	Procedure	HCPCS
J7517	Mycophenolate mofetil, oral, 250 mg	Procedure	HCPCS
J7520	Sirolimus, oral, 1 mg	Procedure	HCPCS
J7525	Tacrolimus, parenteral, 5 mg	Procedure	HCPCS
J9015	Injection, aldesleukin, per single use vial	Procedure	HCPCS
J9022	Injection, atezolizumab, 10 mg	Procedure	HCPCS
J9023	Injection, avelumab, 10 mg	Procedure	HCPCS
J9030	BCG live intravesical instillation, 1 mg	Procedure	HCPCS
J9031	BCG (intravesical) per instillation	Procedure	HCPCS
J9035	Injection, bevacizumab, 10 mg	Procedure	HCPCS
J9039	Injection, blinatumomab, 1 mcg	Procedure	HCPCS
J9042	Injection, brentuximab vedotin, 1 mg	Procedure	HCPCS
J9055	Injection, cetuximab, 10 mg	Procedure	HCPCS
J9119	Injection, cemiplimab-rwlc, 1 mg	Procedure	HCPCS
J9145	Injection, daratumumab, 10 mg	Procedure	HCPCS
J9160	Injection, denileukin diftitox, 300 mcg	Procedure	HCPCS
J9173	Injection, durvalumab, 10 mg	Procedure	HCPCS
J9176	Injection, elotuzumab, 1 mg	Procedure	HCPCS
J9177	Injection, enfortumab vedotin-efv, 0.25 mg	Procedure	HCPCS
J9203	Injection, gemtuzumab ozogamicin, 0.1 mg	Procedure	HCPCS
J9204	Injection, mogamulizumab-kpkc, 1 mg	Procedure	HCPCS
J9212	Injection, interferon alfacon-1, recombinant, 1 mcg	Procedure	HCPCS
J9213	Injection, interferon, alfa-2a, recombinant, 3 million units	Procedure	HCPCS

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Code	Description	Code Category	Code Type
J9214	Injection, interferon, alfa-2b, recombinant, 1 million units	Procedure	HCPCS
J9215	Injection, interferon, alfa-N3, (human leukocyte derived), 250,000 IU	Procedure	HCPCS
J9216	Injection, interferon, gamma 1-b, 3 million units	Procedure	HCPCS
J9227	Injection, isatuximab-irfc, 10 mg	Procedure	HCPCS
J9228	Injection, ipilimumab, 1 mg	Procedure	HCPCS
J9229	Injection, inotuzumab ozogamicin, 0.1 mg	Procedure	HCPCS
J9269	Injection, tagraxofusp-erzs, 10 mcg	Procedure	HCPCS
J9271	Injection, pembrolizumab, 1 mg	Procedure	HCPCS
J9285	Injection, olaratumab, 10 mg	Procedure	HCPCS
J9295	Injection, necitumumab, 1 mg	Procedure	HCPCS
J9299	Injection, nivolumab, 1 mg	Procedure	HCPCS
J9300	Injection, gemtuzumab ozogamicin, 5 mg	Procedure	HCPCS
J9301	Injection, obinutuzumab, 10 mg	Procedure	HCPCS
J9302	Injection, ofatumumab, 10 mg	Procedure	HCPCS
J9303	Injection, panitumumab, 10 mg	Procedure	HCPCS
J9306	Injection, pertuzumab, 1 mg	Procedure	HCPCS
J9308	Injection, ramucirumab, 5 mg	Procedure	HCPCS
J9309	Injection, polatuzumab vedotin-piiq, 1 mg	Procedure	HCPCS
J9310	Injection, rituximab, 100 mg	Procedure	HCPCS
J9311	Injection, rituximab 10 mg and hyaluronidase	Procedure	HCPCS
J9312	Injection, rituximab, 10 mg	Procedure	HCPCS
J9330	Injection, temsirolimus, 1 mg	Procedure	HCPCS
J9349	Injection, tafasitamab-cxix, 2 mg	Procedure	HCPCS
J9354	Injection, ado-trastuzumab emtansine, 1 mg	Procedure	HCPCS

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Code	Description	Code Category	Code Type
J9355	Injection, trastuzumab, excludes biosimilar, 10 mg	Procedure	HCPCS
K0119	Azathioprine, oral, tab, 50 mg	Procedure	HCPCS
K0120	Azathioprine, parenteral, 100 mg	Procedure	HCPCS
K0122	Cyclosporine, parenteral, 250 mg	Procedure	HCPCS
K0412	Mycophenolate mofetil, oral, 250 mg (CellCept)	Procedure	HCPCS
Q2012	Injection, pegademase bovine, 25 IU	Procedure	HCPCS
Q2019	Injection, basiliximab, 20 mg	Procedure	HCPCS
Q2024	Injection, bevacizumab, 0.25 mg	Procedure	HCPCS
Q2040	Tisagenlecleucel, up to 250 million CAR-positive viable T cells, including leukapheresis and dose preparation procedures, per infusion	Procedure	HCPCS
Q2043	Sipuleucel-T, minimum of 50 million autologous CD54+ cells activated with PAP-GM-CSF, including leukapheresis and all other preparatory procedures, per infusion	Procedure	HCPCS
Q2044	Injection, belimumab, 10 mg	Procedure	HCPCS
Q3025	Injection, interferon beta-1a, 11 mcg for intramuscular use	Procedure	HCPCS
Q3026	Injection, interferon beta-1a, 11 mcg for subcutaneous use	Procedure	HCPCS
Q3027	Injection, interferon beta-1a, 1 mcg for intramuscular use	Procedure	HCPCS
Q3028	Injection, interferon beta-1a, 1 mcg for subcutaneous use	Procedure	HCPCS
Q4053	Injection, pegfilgrastim, 1 mg	Procedure	HCPCS
Q4079	Injection, natalizumab, 1 mg	Procedure	HCPCS
Q5101	Injection, filgrastim-sndz, biosimilar, (Zarxio), 1 mcg	Procedure	HCPCS
Q5102	Injection, infliximab, biosimilar, 10 mg	Procedure	HCPCS
Q5103	Injection, infliximab-dyyb, biosimilar, (Inflectra), 10 mg	Procedure	HCPCS
Q5104	Injection, infliximab-abda, biosimilar, (Renflexis), 10 mg	Procedure	HCPCS
Q5107	Injection, bevacizumab-awwb, biosimilar, (Mvasi), 10 mg	Procedure	HCPCS

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Code	Description	Code Category	Code Type
Q5108	Injection, pegfilgrastim-jmdb, biosimilar, (Fulphila), 0.5 mg	Procedure	HCPCS
Q5109	Injection, infliximab-qbtx, biosimilar, (Ixifi), 10 mg	Procedure	HCPCS
Q5110	Injection, filgrastim-aafi, biosimilar, (Nivestym), 1 mcg	Procedure	HCPCS
Q5111	Injection, pegfilgrastim-cbqv, biosimilar, (Udenyca), 0.5 mg	Procedure	HCPCS
Q5112	Injection, trastuzumab-dttb, biosimilar, (Ontruzant), 10 mg	Procedure	HCPCS
Q5113	Injection, trastuzumab-pkrb, biosimilar, (Herzuma), 10 mg	Procedure	HCPCS
Q5114	Injection, Trastuzumab-dkst, biosimilar, (Ogivri), 10 mg	Procedure	HCPCS
Q5115	Injection, rituximab-abbs, biosimilar, (Truxima), 10 mg	Procedure	HCPCS
Q5116	Injection, trastuzumab-qyyp, biosimilar, (Trazimera), 10 mg	Procedure	HCPCS
Q5117	Injection, trastuzumab-anns, biosimilar, (Kanjinti), 10 mg	Procedure	HCPCS
Q5118	Injection, bevacizumab-bvzr, biosimilar, (Zirabev), 10 mg	Procedure	HCPCS
Q5119	Injection, rituximab-pvvr, biosimilar, (RUXIENCE), 10 mg	Procedure	HCPCS
Q9989	Ustekinumab, for intravenous injection, 1 mg	Procedure	HCPCS
S0116	Bevacizumab, 100 mg	Procedure	HCPCS
S0135	Injection pegfilgrastim, 6 mg	Procedure	HCPCS
S0145	Injection, PEGylated interferon alfa-2A, 180 mcg per ml	Procedure	HCPCS
S0146	Injection, pegylated interferon alfa-2b, 10 mcg per 0.5 ml	Procedure	HCPCS
S0148	Injection, PEGylated interferon alfa-2B, 10 mcg	Procedure	HCPCS
S0162	Injection, efalizumab, 125 mg	Procedure	HCPCS
S0177	Levamisole HCl, oral, 50 mg	Procedure	HCPCS
S0193	Injection alefacept, 7.5 mg (includes dose packaging)	Procedure	HCPCS
<b>Immunosuppressants</b>			
C9050	Injection, emapalumab-lzsg, 1 mg	Procedure	HCPCS
C9110	Injection, alemtuzumab, per 10 mg/ ml	Procedure	HCPCS

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
C9455	Injection, siltuximab, 10 mg	Procedure	HCPCS
J0202	Injection, alemtuzumab, 1 mg	Procedure	HCPCS
J2860	Injection, siltuximab, 10 mg	Procedure	HCPCS
J9010	Injection, alemtuzumab, 10 mg	Procedure	HCPCS
J9210	Injection, emapalumab-lzsg, 1 mg	Procedure	HCPCS
Q9979	Injection, Alemtuzumab, 1 mg	Procedure	HCPCS
S0087	Injection, alemtuzumab, 30 mg	Procedure	HCPCS
<b>Vasopressors</b>			
84588	Vasopressin (antidiuretic hormone, ADH)	Procedure	CPT-4
J0170	Injection, adrenalin, epinephrine, up to 1 ml ampule	Procedure	HCPCS
J0171	Injection, adrenalin, epinephrine, 0.1 mg	Procedure	HCPCS
J0590	Injection, ethylnorepinephrine hcl, 1 ml	Procedure	HCPCS
J1250	Injection, dobutamine HCl, per 250 mg	Procedure	HCPCS
J1265	Injection, dopamine HCl, 40 mg	Procedure	HCPCS
Q4076	Injection, dopamine HCl, 40 mg	Procedure	HCPCS
<b>Fever</b>			
R50	Fever of other and unknown origin	Diagnosis	ICD-10-CM
R50.2	Drug induced fever	Diagnosis	ICD-10-CM
R50.8	Other specified fever	Diagnosis	ICD-10-CM
R50.81	Fever presenting with conditions classified elsewhere	Diagnosis	ICD-10-CM
R50.84	Febrile nonhemolytic transfusion reaction	Diagnosis	ICD-10-CM
R50.9	Fever, unspecified	Diagnosis	ICD-10-CM
R56.00	Simple febrile convulsions	Diagnosis	ICD-10-CM
<b>Cough</b>			



**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
R05	Cough	Diagnosis	ICD-10-CM
<b>Shortness of Breath</b>			
R06.0	Dyspnea	Diagnosis	ICD-10-CM
R06.00	Dyspnea, unspecified	Diagnosis	ICD-10-CM
R06.01	Orthopnea	Diagnosis	ICD-10-CM
R06.02	Shortness of breath	Diagnosis	ICD-10-CM
R06.03	Acute respiratory distress	Diagnosis	ICD-10-CM
R06.09	Other forms of dyspnea	Diagnosis	ICD-10-CM
R06.2	Wheezing	Diagnosis	ICD-10-CM
R09.02	Hypoxemia	Diagnosis	ICD-10-CM
<b>Abdominal pain or diarrhea</b>			
R19.7	Diarrhea, unspecified	Diagnosis	ICD-10-CM
<b>Myalgia</b>			
M79.1	Myalgia	Diagnosis	ICD-10-CM
M79.10	Myalgia, unspecified site	Diagnosis	ICD-10-CM
M79.11	Myalgia of mastication muscle	Diagnosis	ICD-10-CM
M79.12	Myalgia of auxiliary muscles, head and neck	Diagnosis	ICD-10-CM
M79.18	Myalgia, other site	Diagnosis	ICD-10-CM
<b>Malaise/Fatigue</b>			
R53	Malaise and fatigue	Diagnosis	ICD-10-CM
R53.0	Neoplastic (malignant) related fatigue	Diagnosis	ICD-10-CM
R53.1	Weakness	Diagnosis	ICD-10-CM
R53.8	Other malaise and fatigue	Diagnosis	ICD-10-CM
R53.81	Other malaise	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

Code	Description	Code Category	Code Type
R53.83	Other fatigue	Diagnosis	ICD-10-CM
<b>Smell/Taste Disturbance</b>			
R43	Disturbances of smell and taste	Diagnosis	ICD-10-CM
R43.0	Anosmia	Diagnosis	ICD-10-CM
R43.1	Parosmia	Diagnosis	ICD-10-CM
R43.2	Parageusia	Diagnosis	ICD-10-CM
R43.8	Other disturbances of smell and taste	Diagnosis	ICD-10-CM
R43.9	Unspecified disturbances of smell and taste	Diagnosis	ICD-10-CM
<b>Nasal Congestion</b>			
R09.81	Nasal Congestion	Diagnosis	ICD-10-CM
<b>Sore Throat</b>			
J02.9	Acute pharyngitis, unspecified	Diagnosis	ICD-10-CM
R07	Pain in throat and chest	Diagnosis	ICD-10-CM
R07.0	Pain in throat	Diagnosis	ICD-10-CM
<b>Nausea or Vomiting</b>			
R11	Nausea and vomiting	Diagnosis	ICD-10-CM
R11.0	Nausea	Diagnosis	ICD-10-CM
R11.1	Vomiting	Diagnosis	ICD-10-CM
R11.10	Vomiting, unspecified	Diagnosis	ICD-10-CM
R11.11	Vomiting without nausea	Diagnosis	ICD-10-CM
R11.12	Projectile vomiting	Diagnosis	ICD-10-CM
R11.13	Vomiting of fecal matter	Diagnosis	ICD-10-CM
R11.14	Bilious vomiting	Diagnosis	ICD-10-CM
R11.15	Cyclical vomiting syndrome unrelated to migraine	Diagnosis	ICD-10-CM

**Appendix F. List of Current Procedural Terminology, Fourth Edition (CPT-4), Current Procedural Terminology, Second Edition (CPT-2), Current Procedural Terminology, Third Edition (CPT-3), Healthcare Common Procedure Coding System, Level II (HCPCS), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Covariates in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
R11.2	Nausea with vomiting, unspecified	Diagnosis	ICD-10-CM
<b>Headache</b>			
R51	Headache	Diagnosis	ICD-10-CM
<b>Multi-system Inflammatory Syndrome</b>			
M35.81	Multisystem inflammatory syndrome	Diagnosis	ICD-10-CM

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
<b>Glucocorticoids - Systemic</b>	
beclomethasone dipropionate	Qvar
beclomethasone dipropionate	Qvar RediHaler
betamethasone acetate and sodium phos in sterile water/PF	betameth ac,sod phos(PF)-water
betamethasone acetate/betamethasone sodium phosphate	BSP-0820
betamethasone acetate/betamethasone sodium phosphate	Beta-1
betamethasone acetate/betamethasone sodium phosphate	Celestone Soluspan
betamethasone acetate/betamethasone sodium phosphate	Pod-Care 100C
betamethasone acetate/betamethasone sodium phosphate	ReadySharp Betamethasone
betamethasone acetate/betamethasone sodium phosphate	betamethasone acet,sod phos
betamethasone acetate/betamethasone sodium phosphate/water	betamethasone ace,sod phos-wtr
betamethasone sodium phosph in sterile water for injection	betamethasone sod phosph-water
budesonide	Pulmicort
budesonide	Pulmicort Flexhaler
budesonide	budesonide
budesonide/formoterol fumarate	Symbicort
budesonide/formoterol fumarate	budesonide-formoterol
budesonide/glycopyrrolate/formoterol fumarate	Breztri Aerosphere
bupivacaine HCl/dexamethasone sodium phos in sterile water	bupivacaine-dexameth in water
ciclesonide	Alvesco
cortisone acetate	cortisone
dexamethasone	Decadron
dexamethasone	DexPak 10 day
dexamethasone	DexPak 13 Day
dexamethasone	DexPak 6 Day
dexamethasone	Dexabliss
dexamethasone	Dxevo
dexamethasone	Hemady
dexamethasone	HiDex
dexamethasone	TaperDex
dexamethasone	ZCort
dexamethasone	dexamethasone
dexamethasone acetate and sodium phosphate in sterile water	dexamethasone ac, sod ph-water
dexamethasone acetate in sodium chloride, iso-osmotic	dexamethasone ace-NaCl,iso-osm
dexamethasone sodium phosphate	Dexonto
dexamethasone sodium phosphate	ReadySharp dexamethasone
dexamethasone sodium phosphate	dexamethasone sodium phosphate
dexamethasone sodium phosphate in 0.9 % sodium chloride	dexamethasone-0.9 % sod. chlor
dexamethasone sodium phosphate/PF	Active Injection Kit D (PF)
dexamethasone sodium phosphate/PF	DoubleDex (PF)
dexamethasone sodium phosphate/PF	MAS Care-Pak (PF)

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
dexamethasone sodium phosphate/PF	dexamethasone sodium phos (PF)
dexamethasone sodium phosphate/lidocaine HCl	Lidocidex-I
fluticasone furoate	Arnuity Ellipta
fluticasone furoate/umeclidinium bromide/vilanterol trifrenat	Trelegy Ellipta
fluticasone furoate/vilanterol trifrenate	Breo Ellipta
fluticasone propionate	ArmonAir Digihaler
fluticasone propionate	Flovent Diskus
fluticasone propionate	Flovent HFA
fluticasone propionate/salmeterol xinafoate	Advair Diskus
fluticasone propionate/salmeterol xinafoate	Advair HFA
fluticasone propionate/salmeterol xinafoate	AirDuo Digihaler
fluticasone propionate/salmeterol xinafoate	AirDuo RespiClick
fluticasone propionate/salmeterol xinafoate	Wixela Inhub
fluticasone propionate/salmeterol xinafoate	fluticasone propion-salmeterol
hydrocortisone sod succinate	A-Hydrocort
hydrocortisone sod succinate	Solu-Cortef
hydrocortisone sodium succinate/PF	Solu-Cortef Act-O-Vial (PF)
methylprednisolone	Medrol
methylprednisolone	Medrol (Pak)
methylprednisolone	Methylpred DP
methylprednisolone	methylprednisolone
methylprednisolone acetate	Depo-Medrol
methylprednisolone acetate	P-Care D40
methylprednisolone acetate	P-Care D80
methylprednisolone acetate	methylprednisolone acetate
methylprednisolone acetate in sodium chloride,iso-osmotic/PF	methylpred ac(PF)-NaCl,iso-osm
methylprednisolone acetate in sterile water for injection	methylprednisolone acet-water
methylprednisolone acetate/bupivacaine HCl in sterile water	methylprednisol ac-bupivac-wat
methylprednisolone sodium succinate	Solu-Medrol
methylprednisolone sodium succinate	methylprednisolone sodium succ
methylprednisolone sodium succinate/PF	Solu-Medrol (PF)
mometasone furoate	Asmanex HFA
mometasone furoate	Asmanex Twisthaler
mometasone furoate/formoterol fumarate	Dulera
prednisolone	Millipred
prednisolone	Millipred DP
prednisolone	prednisolone
prednisolone sodium phosphate	Orapred ODT
prednisolone sodium phosphate	Pediapred
prednisolone sodium phosphate	Veripred 20
prednisolone sodium phosphate	prednisolone sodium phosphate

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
prednisone	Prednisone IntenSol
prednisone	Rayos
prednisone	prednisone
triamcinolone acetonide	Kenalog
triamcinolone acetonide	Kenalog-40
triamcinolone acetonide	Kenalog-80
triamcinolone acetonide	P-Care K40
triamcinolone acetonide	P-Care K80
triamcinolone acetonide	Pod-Care 100K
triamcinolone acetonide	Pro-C-Dure 5
triamcinolone acetonide	Pro-C-Dure 6
triamcinolone acetonide	Zilretta
triamcinolone acetonide	triamcinolone acetonide
triamcinolone acetonide in 0.9 % sodium chloride	triamcinolone acetone-0.9% NaCl
triamcinolone acetonide/0.9% sodium chloride/PF	triamcinol ac (PF) in 0.9%NaCl
triamcinolone acetonide/bupivacaine/in 0.9% sodium chloride	triamcinol ace-bupiv-0.9% NaCl
triamcinolone acetonide/lidocaine HCl	Lidocilone I
triamcinolone diacetate in 0.9 % sodium chloride	triamcinolone diacet-0.9% NaCl
triamcinolone diacetate in 0.9 % sodium chloride/PF	triamcinolone dia(PF)-0.9%NaCl
triamcinolone hexacetonide	Aristospan Intra-Articular
triamcinolone hexacetonide	Aristospan Intralesional
<b>Glucocorticoids - Inhaled</b>	
beclomethasone dipropionate	Qvar
beclomethasone dipropionate	Qvar RediHaler
budesonide	Pulmicort
budesonide	Pulmicort Flexhaler
budesonide	budesonide
budesonide/formoterol fumarate	Symbicort
budesonide/formoterol fumarate	budesonide-formoterol
budesonide/glycopyrrolate/formoterol fumarate	Breztri Aerosphere
ciclesonide	Alvesco
fluticasone furoate	Arnuity Ellipta
fluticasone furoate/umeclidinium bromide/vilanterol trifenate	Trelegy Ellipta
fluticasone furoate/vilanterol trifenate	Breo Ellipta
fluticasone propionate	ArmonAir Digihaler
fluticasone propionate	Flovent Diskus
fluticasone propionate	Flovent HFA
fluticasone propionate/salmeterol xinafoate	Advair Diskus
fluticasone propionate/salmeterol xinafoate	Advair HFA
fluticasone propionate/salmeterol xinafoate	AirDuo Digihaler

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
fluticasone propionate/salmeterol xinafoate	AirDuo RespiClick
fluticasone propionate/salmeterol xinafoate	Wixela Inhub
fluticasone propionate/salmeterol xinafoate	fluticasone propion-salmeterol
mometasone furoate	Asmanex HFA
mometasone furoate	Asmanex Twisthaler
mometasone furoate/formoterol fumarate	Dulera
Glucocorticoids - Ophthalmic	
betamethasone sodium phos/chondroitin sulfate A sodium/PF	Klarity-B (betameth-chond)(PF)
gentamicin sulfate/prednisolone acetate	Pred-G
gentamicin sulfate/prednisolone acetate	Pred-G S.O.P.
neomycin sulfate/bacitracin zinc/polymyxin B/hydrocortisone	Neo-Polycin HC
neomycin sulfate/bacitracin zinc/polymyxin B/hydrocortisone	neomycin-bacitracin-poly-HC
neomycin sulfate/polymyxin B sulfate/hydrocortisone	neomycin-polymyxin-HC
prednisolone acetate	Omnipred
prednisolone acetate	Pred Forte
prednisolone acetate	Pred Mild
prednisolone acetate	prednisolone acetate
prednisolone acetate/PF	prednisolone acetate (PF)
prednisolone acetate/bromfenac sodium	prednisolone acetate-bromfenac
prednisolone acetate/gatifloxacin	prednisolone acet-gatifloxacin
prednisolone acetate/gatifloxacin/bromfenac sodium	prednisol ace-gatiflox-bromfen
prednisolone acetate/moxifloxacin HCl	prednisolone-moxifloxacin HCl
prednisolone acetate/moxifloxacin HCl/bromfenac sodium	prednisolone-moxiflox-bromfen
prednisolone acetate/moxifloxacin HCl/nepafenac	prednisolone-moxiflo-nepafenac
prednisolone acetate/nepafenac	prednisolone acetate-nepafenac
prednisolone sodium phosphate	prednisolone sodium phosphate
prednisolone sodium phosphate/bromfenac sodium	prednisolone sod ph-bromfenac
prednisolone sodium phosphate/gatifloxacin	prednisolone sod ph-gatifloxac
prednisolone sodium phosphate/gatifloxacin/bromfenac sodium	prednisoln sp-gatiflox-bromfen
prednisolone sodium phosphate/moxifloxacin HCl	prednisolone sod ph-moxiflox
prednisolone sodium phosphate/moxifloxacin HCl/bromfenac sod	prednisoln sp-moxiflox-bromfen
sulfacetamide sodium/prednisolone acetate	Blephamide
sulfacetamide sodium/prednisolone acetate	Blephamide S.O.P.
sulfacetamide sodium/prednisolone sodium phosphate	sulfacetamide-prednisolone
Glucocorticoids - Topical	
HYDROCORTISONE	First-Hydrocortisone
acyclovir/hydrocortisone	Xerese
benzoyl peroxide/hydrocortisone	Vanoxide-HC
betamethasone dipropionate	Sernivo
betamethasone dipropionate	betamethasone dipropionate
betamethasone dipropionate	betamethasone, augmented

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
betamethasone dipropionate/propylene glycol	Diprolene (augmented)
betamethasone dipropionate/propylene glycol	betamethasone, augmented
betamethasone valerate	Luxiq
betamethasone valerate	betamethasone valerate
calcipotriene/betamethasone dipropionate	Enstilar
calcipotriene/betamethasone dipropionate	Taclonex
calcipotriene/betamethasone dipropionate	Wynzora
calcipotriene/betamethasone dipropionate	calcipotriene-betamethasone
ciclopirox/triamcinolone acetonide	Trilociclo
clioquinol/hydrocortisone	Ala-Quin
clotrimazole/betamethasone dipropionate	Lotrisone
clotrimazole/betamethasone dipropionate	clotrimazole-betamethasone
clotrimazole/betamethasone dipropionate/zinc oxide	DermacinRx Therazole Pak
econazole nitrate/triamcinolone acetonide	Triamazole
fluticasone propionate	Beser
fluticasone propionate	Cutivate
fluticasone propionate	fluticasone propionate
fluticasone propionate/emollient combination no.65	Beser Kit
hydrocortisone	Advanced Allergy Collect Kit
hydrocortisone	Ala-Cort
hydrocortisone	Ala-Scalp
hydrocortisone	Anti-Itch (HC)
hydrocortisone	Anusol-HC
hydrocortisone	Aquanil HC
hydrocortisone	Aquaphor Itch Relief
hydrocortisone	Beta-HC
hydrocortisone	Cortaid
hydrocortisone	Cortisone (hydrocortisone)
hydrocortisone	Cortisone Cooling
hydrocortisone	Cortizone-10
hydrocortisone	Cortizone-10 Plus
hydrocortisone	Dermarest Eczema (hydrocort)
hydrocortisone	Hydrocream
hydrocortisone	Noble Formula HC
hydrocortisone	Obagi Nu-Derm Tolereen
hydrocortisone	Preparation H Hydrocortisone
hydrocortisone	Procto-Med HC
hydrocortisone	Procto-Pak
hydrocortisone	Proctocort
hydrocortisone	Proctosol HC
hydrocortisone	Proctozone-HC



**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
hydrocortisone	Scalacort
hydrocortisone	Scalp Relief
hydrocortisone	Scalpicin Anti-Itch
hydrocortisone	Soothing Care (hydrocortisone)
hydrocortisone	Texacort
hydrocortisone	hydrocortisone
hydrocortisone acetate	MiCort-HC
hydrocortisone acetate	Vanicream HC
hydrocortisone acetate	hydrocortisone acetate
hydrocortisone acetate/aloe vera	Nucort
hydrocortisone acetate/iodoquinol/aloe polysaccharides no.2	Alcortin A
hydrocortisone acetate/iodoquinol/aloe polysaccharides no.2	hydrocortisone-iodoquinol-aloe2
hydrocortisone acetate/iodoquinol/aloe vera	Vytone
hydrocortisone acetate/iodoquinol/aloe vera	hydrocortisone-iodoquinol-aloe
hydrocortisone acetate/pramoxine HCl	Analpram-HC
hydrocortisone acetate/pramoxine HCl	Epifoam
hydrocortisone acetate/pramoxine HCl	Novacort
hydrocortisone acetate/pramoxine HCl	Pramosone
hydrocortisone acetate/pramoxine HCl	hydrocortisone-pramoxine
hydrocortisone butyrate	Locoid
hydrocortisone butyrate	hydrocortisone butyrate
hydrocortisone butyrate/emollient base	Locoid Lipocream
hydrocortisone butyrate/emollient base	hydrocortisone butyr-emollient
hydrocortisone probutate	Pandel
hydrocortisone valerate	hydrocortisone valerate
hydrocortisone/aloe vera	Anti-Itch(hydrocortisone)-Aloe
hydrocortisone/aloe vera	Cortisone with Aloe
hydrocortisone/aloe vera	Cortizone-10 with aloe
hydrocortisone/aloe vera	Hydrocortisone Plus
hydrocortisone/aloe vera	hydrocortisone-aloe vera
hydrocortisone/aloe vera/vit E acet/vitamins A and D	Anti-Itch (HC) with Aloe-Vit E
hydrocortisone/aloe vera/vit E acet/vitamins A and D	Anti-Itch Plus
hydrocortisone/colloidal oatmeal/aloe/vitamin E	Aveeno Anti-Itch (hydrocortisn)
hydrocortisone/iodoquinol	Dermazene
hydrocortisone/iodoquinol	hydrocortisone-iodoquinol
hydrocortisone/mineral oil/petrolatum,white	hydrocortisone-min oil-wht pet
hydrocortisone/pramoxine HCl/chloroxylenol	Cortane-B
hydrocortisone/salicylic acid/sulfur/shampoo no. 1	Scalacort DK
hydrocortisone/skin cleanser combination no.25	Aqua Glycolic HC
hydrocortisone/skin cleanser combination no.35	Dermasorb HC Complete Kit
hydroquinone/hydrocortisone	Keya

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
hydroquinone/hydrocortisone	hydroquinone-hydrocortisone
hydroquinone/tretinoin/hydrocortisone	Katarya
hydroquinone/tretinoin/hydrocortisone	Kataryaxn
hydroquinone/tretinoin/hydrocortisone	Ketarya
hydroquinone/tretinoin/hydrocortisone	Kevarya
hydroquinone/tretinoin/hydrocortisone	Kutaryaxm
hydroquinone/tretinoin/hydrocortisone	Kutaryaxmpa
hydroquinone/tretinoin/hydrocortisone	Kuvarya
hydroquinone/tretinoin/hydrocortisone	Kuvarye
hydroquinone/tretinoin/hydrocortisone	hydroquin-tretinoin-hydrocort
ketoconazole/hydrocortisone	Pheyo
ketoconazole/hydrocortisone	ketoconazole-hydrocortisone
ketoconazole/iodoquinol/hydrocortisone	Pheodoyo
ketoconazole/iodoquinol/hydrocortisone	ketoconazole-iodoquinol-hc
lidocaine HCl/hydrocortisone acetate	Lidocort
lidocaine HCl/hydrocortisone acetate	lidocaine HCl-hydrocortison ac
minoxidil/betamethasone dipropionate	Oxopod
minoxidil/betamethasone dipropionate	minoxidil-betamethasone
mometasone furoate	Elocon
mometasone furoate	mometasone
mometasone furoate/ammonium lactate	Quinosone
mometasone furoate/dimethicone	Quinixil
neomycin sulfate/polymyxin B sulfate/hydrocortisone	Cortisporin
neomycin/bacitracin/polymyxin B/hydrocortisone	Cortisporin
nystatin/triamcinolone acetamide	nystatin-triamcinolone
triamcinolone acetamide	Kenalog
triamcinolone acetamide	Trianex
triamcinolone acetamide	Triderm
triamcinolone acetamide	triamcinolone acetamide
triamcinolone acetamide/dimethicone	Ellzia Pak
triamcinolone acetamide/dimethicone/silicone, adhesive	DermaWerx SDS
triamcinolone acetamide/dimethicone/silicone, adhesive	NuTriRx
triamcinolone acetamide/dimethicone/silicone, adhesive	SanaDermRx
triamcinolone acetamide/dimethicone/silicone, adhesive	Sure Result Tac Pak
triamcinolone acetamide/dimethicone/silicone, adhesive	Trivix
triamcinolone acetamide/dimethicone/silicone, adhesive	Whytederm TDPak
triamcinolone acetamide/dimethicone/silicone, adhesive	Whytederm Trilasil Pak
triamcinolone acetamide/emollient combination no.86	Dermasorb TA Complete Kit
triamcinolone acetamide/gauze bandage/silicone, adhesive	Sila III
triamcinolone acetamide/niacinamide	triamcinolone-niacinamide
triamcinolone acetamide/silicones	SilaLite Pak

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
<b>Immune Modulators</b>	
BCG live	Tice BCG
BCG vaccine, live/PF	BCG vaccine, live (PF)
abatacept	Orencia
abatacept	Orencia ClickJect
abatacept/maltose	Orencia (with maltose)
acalabrutinib	Calquence
adalimumab	Humira
adalimumab	Humira Pediatric Crohns Start
adalimumab	Humira Pen
adalimumab	Humira Pen Crohns-UC-HS Start
adalimumab	Humira Pen Psor-Uveits-Adol HS
adalimumab	Humira(CF)
adalimumab	Humira(CF) Pedi Crohns Starter
adalimumab	Humira(CF) Pen
adalimumab	Humira(CF) Pen Crohns-UC-HS
adalimumab	Humira(CF) Pen Psor-Uv-Adol HS
ado-trastuzumab emtansine	Kadcyla
aldesleukin	Proleukin
anakinra	Kineret
atezolizumab	Tecentriq
auranofin	Ridaura
avelumab	Bavencio
axicabtagene ciloleucel	Yescarta
azathioprine	Azasan
azathioprine	Imuran
azathioprine	azathioprine
azathioprine sodium	azathioprine sodium
baricitinib	Olumiant
basiliximab	Simulect
belantamab mafodotin-blmf	Blenrep
belatacept	Nulojix
belimumab	Benlysta
benralizumab	Fasenra
benralizumab	Fasenra Pen
bevacizumab	Avastin
bevacizumab	bevacizumab
bevacizumab-awwb	Mvasi
bevacizumab-bvzr	Zirabev
blinatumomab	Blinicyto
brentuximab vedotin	Adcetris

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
brexucabtagene autoleucl	Tecartus
brodalumab	Siliq
canakinumab/PF	Ilaris (PF)
cemiplimab-rwlc	Libtayo
certolizumab pegol	Cimzia
certolizumab pegol	Cimzia Powder for Reconst
certolizumab pegol	Cimzia Starter Kit
cetuximab	Erbix
cyclosporine	Sandimmune
cyclosporine	cyclosporine
cyclosporine, modified	Gengraf
cyclosporine, modified	Neoral
cyclosporine, modified	cyclosporine modified
daratumumab	Darzalex
daratumumab-hyaluronidase-fihj	Darzalex Faspro
denosumab	Prolia
denosumab	Xgeva
dinutuximab	Unituxin
dostarlimab-gxly	Jemperli
dupilumab	Dupixent
durvalumab	Imfinzi
eculizumab	Soliris
elotuzumab	Empliciti
enfortumab vedotin-ejfv	Padcev
etanercept	Enbrel
etanercept	Enbrel Mini
etanercept	Enbrel SureClick
fam-trastuzumab deruxtecan-nxki	Enhertu
filgrastim	Neupogen
filgrastim-aafi	Nivestym
filgrastim-sndz	Zarxio
gemtuzumab ozogamicin	Mylotarg
golimumab	Simponi
golimumab	Simponi ARIA
guselkumab	Tremfya
ibrutinib	Imbruvica
idecabtagene vicleucl	Abecma
infliximab	Remicade
infliximab-abda	Renflexis
infliximab-dyyb	Inflectra
inotuzumab ozogamicin	Besponsa

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
interferon alfa-2b,recomb.	Intron A
interferon beta-1a	Avonex
interferon beta-1a/albumin human	Avonex (with albumin)
interferon beta-1a/albumin human	Rebif (with albumin)
interferon beta-1a/albumin human	Rebif Rebidose
interferon beta-1a/albumin human	Rebif Titration Pack
interferon beta-1b	Betaseron
interferon beta-1b	Extavia
interferon gamma-1b,recomb.	Actimmune
ipilimumab	Yervoy
isatuximab-irfc	Sarclisa
ixekizumab	Taltz Autoinjector
ixekizumab	Taltz Autoinjector (2 Pack)
ixekizumab	Taltz Autoinjector (3 Pack)
ixekizumab	Taltz Syringe
kit for prep yttrium-90/ibritumomab tiuxetan/albumin human	Zevalin (Y-90)
leflunomide	Arava
leflunomide	leflunomide
lenalidomide	Revlimid
levamisole HCl	levamisole (bulk)
lisocabtagene maraleucel	Breyanzi
lisocabtagene maraleucel, CD4 component, 2 of 2	Breyanzi CD4 Component (2of 2)
lisocabtagene maraleucel, CD8 component, 1 of 2	Breyanzi CD8 Component (1of 2)
loncastuximab tesirine-lpyl	Zynlonta
luspatercept-aamt	Reblozyl
margetuximab-cmkb	Margenza
mepolizumab	Nucala
mogamulizumab-kpkc	Poteligeo
moxetumomab pasudotox-tdfk	Lumoxiti
mycophenolate mofetil	CellCept
mycophenolate mofetil	mycophenolate mofetil
mycophenolate mofetil HCl	CellCept Intravenous
mycophenolate mofetil HCl	mycophenolate mofetil (HCl)
mycophenolate sodium	Myfortic
mycophenolate sodium	mycophenolate sodium
natalizumab	Tysabri
naxitamab-gqgk	Danyelza
necitumumab	Portrazza
nivolumab	Opdivo
obinutuzumab	Gazyva
ofatumumab	Arzerra

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
ofatumumab	Kesimpta Pen
olaratumab	Lartruvo
palifermin	Kepivance
palivizumab	Synagis
panitumumab	Vectibix
pegademase bovine	Adagen
pegfilgrastim	Neulasta
pegfilgrastim-bmez	Ziextenzo
pegfilgrastim-cbqv	Udenyca
pegfilgrastim-jmdb	Fulphila
peginterferon alfa-2a	Pegasys
peginterferon alfa-2a	Pegasys ProClick
peginterferon alfa-2b	PegIntron
peginterferon alfa-2b	Sylatron
peginterferon beta-1a	Plegridy
pembrolizumab	Keytruda
pertuzumab	Perjeta
pertuzumab-trastuzumab-hyaluronidase-zzxf	Phesgo
polatuzumab vedotin-piiq	Polivy
ramucirumab	Cyramza
reslizumab	Cinqair
rilonacept	Arcalyst
risankizumab-rzaa	Skyrizi
rituximab	Rituxan
rituximab-abbs	Truxima
rituximab-arrx	Riabni
rituximab-pvvr	Ruxience
rituximab/hyaluronidase, human recombinant	Rituxan Hycela
ruxolitinib phosphate	Jakafi
sacituzumab govitecan-hziy	Trodelyv
sargramostim	Leukine
sarilumab	Kevzara
satralizumab-mwge	Enspryng
secukinumab	Cosentyx
secukinumab	Cosentyx (2 Syringes)
secukinumab	Cosentyx Pen
secukinumab	Cosentyx Pen (2 Pens)
siltuximab	Sylvant
sipuleucel-T/lactated ringers solution	Provenge
sirolimus	Rapamune
sirolimus	sirolimus

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
tacrolimus	Astagraf XL
tacrolimus	Envarsus XR
tacrolimus	Prograf
tacrolimus	tacrolimus
tafasitamab-cxix	Monjuvi
tagraxofusp-erzs	Elzonris
talimogene laherparepvec	Imlygic
tbo-filgrastim	Granix
temsirolimus	Torisel
temsirolimus	temsirolimus
thalidomide	Thalomid
tildrakizumab-asmn	Ilumya
tisagenlecleucel	Kymriah
tocilizumab	Actemra
tocilizumab	Actemra ACTPen
tofacitinib citrate	Xeljanz
tofacitinib citrate	Xeljanz XR
trastuzumab	Herceptin
trastuzumab-anns	Kanjinti
trastuzumab-dkst	Ogivri
trastuzumab-dttb	Ontruzant
trastuzumab-hyaluronidase-oysk	Herceptin Hylecta
trastuzumab-pkrb	Herzuma
trastuzumab-qyyp	Trazimera
ustekinumab	Stelara
zanubrutinib	Brukinsa
Immunosuppressants	
abatacept	Orencia
abatacept	Orencia ClickJect
abatacept/maltose	Orencia (with maltose)
adalimumab	Humira
adalimumab	Humira Pediatric Crohns Start
adalimumab	Humira Pen
adalimumab	Humira Pen Crohns-UC-HS Start
adalimumab	Humira Pen Psor-Uveits-Adol HS
adalimumab	Humira(CF)
adalimumab	Humira(CF) Pedi Crohns Starter
adalimumab	Humira(CF) Pen
adalimumab	Humira(CF) Pen Crohns-UC-HS
adalimumab	Humira(CF) Pen Psor-Uv-Adol HS
alemtuzumab	Campath

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
alemtuzumab	Lemtrada
anakinra	Kineret
azathioprine	Azasan
azathioprine	Imuran
azathioprine	azathioprine
azathioprine sodium	azathioprine sodium
basiliximab	Simulect
belatacept	Nulojix
belimumab	Benlysta
certolizumab pegol	Cimzia
certolizumab pegol	Cimzia Powder for Reconst
certolizumab pegol	Cimzia Starter Kit
cyclophosphamide	cyclophosphamide
cyclosporine	Sandimmune
cyclosporine	cyclosporine
cyclosporine, modified	Gengraf
cyclosporine, modified	Neoral
cyclosporine, modified	cyclosporine modified
emapalumab-lzsg	Gamifant
etanercept	Enbrel
etanercept	Enbrel Mini
etanercept	Enbrel SureClick
everolimus	Afinitor
everolimus	Afinitor Disperz
everolimus	Zortress
everolimus	everolimus (antineoplastic)
everolimus	everolimus (immunosuppressive)
golimumab	Simponi
golimumab	Simponi ARIA
infliximab	Remicade
infliximab-abda	Renflexis
infliximab-dyyb	Inflectra
leflunomide	Arava
leflunomide	leflunomide
lenalidomide	Revlimid
methotrexate	Xatmep
methotrexate sodium	Trexall
methotrexate sodium	methotrexate sodium
methotrexate sodium/PF	methotrexate sodium (PF)
mycophenolate mofetil	CellCept
mycophenolate mofetil	mycophenolate mofetil



**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
mycophenolate mofetil HCl	CellCept Intravenous
mycophenolate mofetil HCl	mycophenolate mofetil (HCl)
mycophenolate sodium	Myfortic
mycophenolate sodium	mycophenolate sodium
pomalidomide	Pomalyst
siltuximab	Sylvant
sirolimus	Rapamune
sirolimus	sirolimus
tacrolimus	Astagraf XL
tacrolimus	Envarsus XR
tacrolimus	Prograf
tacrolimus	tacrolimus
temsirolimus	Torisel
temsirolimus	temsirolimus
thalidomide	Thalomid
tocilizumab	Actemra
tocilizumab	Actemra ACTPen
<b>Angiotensin Converting Enzyme (ACE) Inhibitors</b>	
amlodipine besylate/benazepril HCl	Lotrel
amlodipine besylate/benazepril HCl	amlodipine-benazepril
benazepril HCl	Lotensin
benazepril HCl	benazepril
benazepril HCl/hydrochlorothiazide	Lotensin HCT
benazepril HCl/hydrochlorothiazide	benazepril-hydrochlorothiazide
captopril	captopril
captopril/hydrochlorothiazide	captopril-hydrochlorothiazide
enalapril maleate	Epaned
enalapril maleate	Vasotec
enalapril maleate	enalapril maleate
enalapril maleate/hydrochlorothiazide	Vaseretic
enalapril maleate/hydrochlorothiazide	enalapril-hydrochlorothiazide
enalaprilat dihydrate	enalaprilat
fosinopril sodium	fosinopril
fosinopril sodium/hydrochlorothiazide	fosinopril-hydrochlorothiazide
lisinopril	Prinivil
lisinopril	Qbrelis
lisinopril	Zestril
lisinopril	lisinopril
lisinopril/hydrochlorothiazide	Zestoretic
lisinopril/hydrochlorothiazide	lisinopril-hydrochlorothiazide
moexipril HCl	moexipril

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
perindopril arginine/amlodipine besylate	Prestalia
perindopril erbumine	perindopril erbumine
quinapril HCl	Accupril
quinapril HCl	quinapril
quinapril HCl/hydrochlorothiazide	Accuretic
quinapril HCl/hydrochlorothiazide	quinapril-hydrochlorothiazide
ramipril	Altace
ramipril	ramipril
trandolapril	trandolapril
trandolapril/verapamil HCl	Tarka
trandolapril/verapamil HCl	trandolapril-verapamil
Angiotensin II Receptor Blockers (ARBs)	
amlodipine besylate/olmesartan medoxomil	Azor
amlodipine besylate/olmesartan medoxomil	amlodipine-olmesartan
amlodipine besylate/valsartan	Exforge
amlodipine besylate/valsartan	amlodipine-valsartan
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
amlodipine besylate/valsartan/hydrochlorothiazide	amlodipine-valsartan-hcthiazid
azilsartan medoxomil	Edarbi
azilsartan medoxomil/chlorthalidone	Edarbyclor
candesartan cilexetil	Atacand
candesartan cilexetil	candesartan
candesartan cilexetil/hydrochlorothiazide	Atacand HCT
candesartan cilexetil/hydrochlorothiazide	candesartan-hydrochlorothiazid
eprosartan mesylate	eprosartan
irbesartan	Avapro
irbesartan	irbesartan
irbesartan/hydrochlorothiazide	Avalide
irbesartan/hydrochlorothiazide	irbesartan-hydrochlorothiazide
losartan potassium	Cozaar
losartan potassium	losartan
losartan potassium/hydrochlorothiazide	Hyzaar
losartan potassium/hydrochlorothiazide	losartan-hydrochlorothiazide
nebivolol HCl/valsartan	Byvalson
olmesartan medoxomil	Benicar
olmesartan medoxomil	olmesartan
olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	Tribenzor
olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	olmesartan-amlodipin-hcthiazid
olmesartan medoxomil/hydrochlorothiazide	Benicar HCT
olmesartan medoxomil/hydrochlorothiazide	olmesartan-hydrochlorothiazide
sacubitril/valsartan	Entresto

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Request**

Generic Name	Brand Name
telmisartan	Micardis
telmisartan	telmisartan
telmisartan/amlodipine besylate	Twynsta
telmisartan/amlodipine besylate	telmisartan-amlodipine
telmisartan/hydrochlorothiazide	Micardis HCT
telmisartan/hydrochlorothiazide	telmisartan-hydrochlorothiazid
valsartan	Diovan
valsartan	valsartan
valsartan/hydrochlorothiazide	Diovan HCT
valsartan/hydrochlorothiazide	valsartan-hydrochlorothiazide
Vasopressors	
dobutamine HCl	dobutamine
dobutamine HCl in dextrose 5 % in water	dobutamine in D5W
dopamine HCl	dopamine
dopamine HCl in dextrose 5 % in water	dopamine in 5 % dextrose
epinephrine HCl in 0.9 % sodium chloride	epinephrine HCl in 0.9 % NaCl
epinephrine HCl in dextrose 5 % in water	epinephrine HCl in 5% dextrose
epinephrine in sodium chloride, iso-osmotic	epinephrine in sod chlor,iso
norepinephrine bitartrate	Levophed (bitartrate)
norepinephrine bitartrate	norepinephrine bitartrate
norepinephrine bitartrate in 0.9 % sodium chloride	norepinephrine bitartrate-NaCl
norepinephrine bitartrate in 5 % dextrose in water	norepinephrine bitartrate-D5W
vasopressin	Vasostrict
vasopressin in 0.9 % sodium chloride	vasopressin in 0.9 % sod chlor
vasopressin in dextrose 5 % in water	vasopressin in dextrose 5 %

## Appendix H. Definition of the Urbanicity Covariate Used in this Request

---

Need: Create a new demographic variable, to be used both in the baseline table and for stratification in the models. This variable, urbanicity, will be mapped from 5-digit zip code and be returned as one of four values per index date (urban, suburban, rural, unknown). Zip used will be agnostic to zip\_uncertain, e.g. all zip dates.

### Urbanicity Look-up File Creation Process:

1. Add a column to the ZIPFILE file for urbanicity. This will be populated given a mapping from the Census Bureau, as described below.

2. The mapping approach for urbanicity uses 4 sources of data (SCDM geographic lookup file , 2016 Census Bureau tabblock files, 2010 relationship file , 2018 UDS Mapping file) and follows the following strategy.

3a. Download all U.S. Census Bureau 2010 Census Urban Areas data, which are available in the TABBLOCK file in the 2016 TIGER/Line shapefiles (tl\_2016\_<state FIPS>\_tabblock10 files), and merge all files into one master file.

(<https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2016.html>)

- Create 2 new variables in the tabblock dataset: URBAN\_CAT (based on logic below for urban categorization) and a new geo identifier (state, county, tract – to be used for mapping to zip with relationship file)

- New URBAN\_CAT variable

- If UR10=R then URBAN\_CAT = 'rural'

- IF UR10=U and UATYPE=C then URBAN\_CAT = 'suburban'

- IF UR10=U and UATYPE=U then URBAN\_CAT = 'urban'

- New geo identifier (concatenate state, county, tract) variable – this would not include block

3b. Join the standard SCDM geographic lookup file and the relationship file on ZIP/ZCTA5 (see Figure A below)

- Of ZIPs in the lookup file with an exact match ZCTA in the relationship file, add ZIP to the relationship file

- Of ZIPs with no ZCTA, check UDS Mapper supplement

- Of ZCTA with no ZIPs, check UDS Mapper supplement

UDS Mapper Supplement (<https://www.udsmapper.org/zcta-crosswalk.cfm>)

3c. Join this modified relationship file to the tabblock file on GEOID1/GEOID2

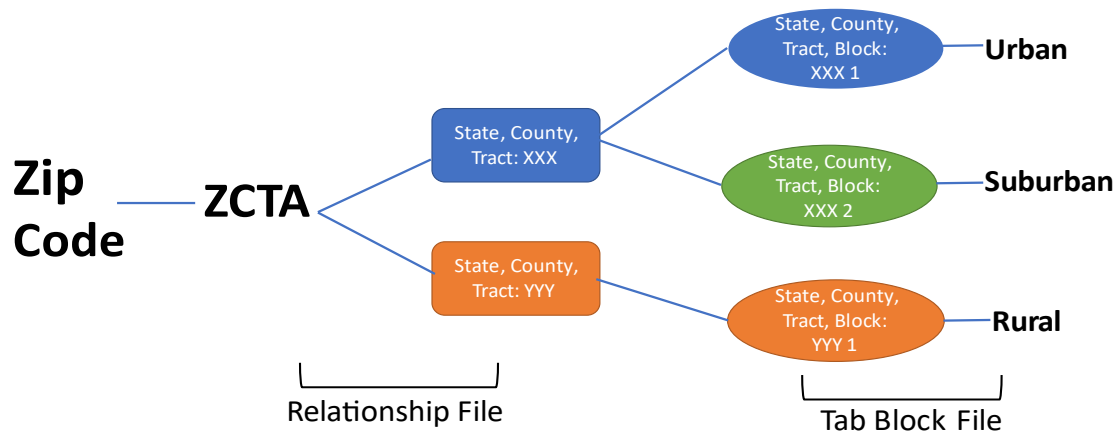
- Retain all of the tabblock file variables, keep ZIP

**Appendix H. Definition of the Urbanicity Covariate Used in this Request**

3d. Assess if a zip code has one or multiple urbanities mapped to it and use the following decision logic to assign a urbanicity category.

- If a Zip has only one distinct URBAN\_CAT value, use this urbanicity category.
- If a Zip has multiple distinct URBAN\_CAT values, find the categorization with the majority of blocks and use this urbanicity category.
- If a Zip does not have a majority of blocks (i.e., a tie), a urbanicity category will be assigned by examining satellite imaging data.
- If Zip in lookup file has no mapping, assign those Zips to 'Not Available' and an urbanicity category of 'unknown' (URBAN\_CAT = 'unknown').

**Figure A**



**Appendix I. Definition of the Socioeconomic Status Proxy Covariates Used in this Request**

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Need: Create a new demographic variable, to be used both in the baseline table and as a covariate in the models. Three variables will be used as proxies for socioeconomic status (SES): median household income, median home value, and percent unemployment. Zip-code level information for these three SES indicators will be derived from the 5-year averages reported in the 2019 American Community Survey (ACS).

SES Indicator Look-up File Creation Process:

The ACS ZIP-level lookup file will contain 1 record per ZIP code per year with a corresponding value for median household income, median home value, and percent unemployment. These variables will all be continuous.

1. Download ACS data from census.gov as CSV files and save as Excel workbooks. We followed the guidance provided here (step 7 onward) from census.gov.

<https://www2.census.gov/data/api-documentation/how-to-download-all-zip-code-tabulation-areas-from-the-census-api.pdf>

2. Use the links listed in the table below for each of the SES proxy variables.

SES proxy	ACS 5-year estimates (2019 vantage point)
Median household income	<a href="https://api.census.gov/data/2019/acs/acs5/profile?get=NAME,DP03_0062E&amp;for=zip%20code%20tabulation%20area:*">https://api.census.gov/data/2019/acs/acs5/profile?get=NAME,DP03_0062E&amp;for=zip code tabulation area:*</a>
Percent unemployment	<a href="https://api.census.gov/data/2019/acs/acs5/subject?get=NAME,S2301_C04_001E&amp;for=zip%20code%20tabulation%20area:*">https://api.census.gov/data/2019/acs/acs5/subject?get=NAME,S2301_C04_001E&amp;for=zip code tabulation area:*</a>
Median property value	<a href="https://api.census.gov/data/2019/acs/acs5/profile?get=NAME,DP04_0089E&amp;for=zip%20code%20tabulation%20area:*">https://api.census.gov/data/2019/acs/acs5/profile?get=NAME,DP04_0089E&amp;for=zip code tabulation area:*</a>

3. Download the "Zip Code to ZCTA Crosswalk" from UDS Mapper

<https://udsmapper.org/zip-code-to-zcta-crosswalk/>

4. Merge the 3 SES proxy data tables to the "Zip Code to ZCTA Crosswalk" table on the ZCTA variable to obtain the corresponding zip code information.

5. Merge the SES proxy data table with the SCDM standard geographic look-up file on zip code.

6. If a zip code in the SCDM geographic look-up file does not match to a zip code in the SES data table from the ACS, set the SES proxies variables to missing.

7. This look-up file will be provided to the programmers to use in the query package creation. Individuals in the SCDM will be matched to the look-up file on zip code of residence.

If a patient has a missing zip code or if the patient’s zip is not in the ZIPFILE in the SCDM, the SES proxy variables will be set to missing.

**Appendix J. Specificatinos Defining Parameters in this Request**

The Center for Drug Evaluation and Research has requested execution of the Cohort Identification and Descriptive Analysis (CIDA) tool 11.3.0 to evaluate the association between race and COVID-19 hospitalization, severe disease and death among patients diagnosed and hospitalized for COVID-19.

**Query period:** 4/1/2020-3/31/2021  
**Coverage requirement:** Medical & Drug Coverage  
**Pre-index enrollment requirement:** 183 days  
**Post-index enrollment requirement:** None  
**Post-episode enrollment requirement for Type 2 analyses:** None  
**Enrollment gap:** 45 days  
**Age groups for scenarios 1-5 (years):** 0-5, 6-11, 12-18, 19-29, 30-39, 40-49, 50-64, 65-74, 75+  
**Age groups for scenarios 6-10 (years):** 0-5, 6-11, 12-18, 19-29, 30-39, 40-49, 50-64  
**Baseline Table Stratifications:** Race (categorical race and known/unknown race), Outcome, Urbanicity  
**Effect Estimates Stratifications:** Urbanicity  
**Envelope macro:** 2: Turn off envelope. No reclassification.  
**Never-exposed cohort:** No  
**Freeze Data:** Yes  
**Eligible Member Calculation:** M: DENNUMPTS variable will be calculated. DENNUMMEMDAYS variable will NOT be calculated.  
**Report 1:** All 6 DP's in rapid SDD  
**Report 2:** Separate report for 3 DP's with the least proportion of unknown race in rapid SDD  
**Sex:** M, F

**Exposure**

Scenario	Baseline Characteristics Group	Independent Variable	Index-Defining Event	Cohort definition	Incident exposure washout period	Incident w/ respect to:	Care setting	Principal diagnosis position	Point Exposure	Maximum Episode Duration	Censor enrollment at evidence of:
1	Overall, COVID + (30 day risk window)	Race (will be further defined in the functional specs)	COVID-19 diagnosis (U07.1) or PCR test with positive SARS-CoV-2 lab result	01: First valid episode during query period	None	None	Any care setting	Any	Y	31	N/A

Appendix J. Specificatinos Defining Parameters in this Request

Event Outcome

Scenario	Event	Care setting	Principal diagnosis position	Event de-duplication
1	COVID-19 Diagnosis (U07.1) <b>(Inpatient Hospitalization with COVID-19 diagnosis)</b>	Inpatient hospital stay	Any	De-duplicate occurrences of the same event group on the same day



**Appendix J. Specificatinos Defining Parameters in this Request**

Exposure											
Scenario	Baseline Characteristics Group	Independent Variable	Index-Defining Event	Cohort definition	Incident exposure washout period	Incident w/ respect to:	Care setting	Principal diagnosis position	Point Exposure	Maximum Episode Duration	Censor enrollment at evidence of:
5	Overall, COVID-19 Hospitalization (30 day risk window)	Race (will be further defined in the functional specs)	COVID-19 diagnosis (U07.1) (Inpatient Hospitalization with COVID-19 diagnosis)	01: First valid episode during query period	None	None	Inpatient Hospital Setting (IP*)	Any	Y	31	N/A
6	Overall, COVID + (30 day risk window)	Race (will be further defined in the functional specs)	COVID-19 diagnosis (U07.1) or PCR test with positive SARS-CoV-2 lab result	01: First valid episode during query period	None	None	Any care setting	Any	Y	31	N/A
7	Overall, COVID + (30 day risk window)	Race (will be further defined in the functional specs)	COVID-19 diagnosis (U07.1) or PCR test with positive SARS-CoV-2 lab result	01: First valid episode during query period	None	None	Any care setting	Any	Y	31	N/A
8	Overall, COVID-19 Hospitalization (30 day risk window)	Race (will be further defined in the functional specs)	COVID-19 diagnosis (U07.1) (Inpatient Hospitalization with COVID-19 diagnosis)	01: First valid episode during query period	None	None	Inpatient Hospital Setting (IP*)	Any	Y	31	N/A
9	Overall, COVID-19 Hospitalization (30 day risk window)	Race (will be further defined in the functional specs)	COVID-19 diagnosis (U07.1) (Inpatient Hospitalization with COVID-19 diagnosis)	01: First valid episode during query period	None	None	Inpatient Hospital Setting (IP*)	Any	Y	31	N/A

**Appendix J. Specificatinos Defining Parameters in this Request**

Event Outcome				
Scenario	Event	Care setting	Principal diagnosis position	Event de-duplication
5	Death - defined using the "Death" table OR the "Encounter" table	Any care setting	N/A	N/A
6	COVID-19 Diagnosis (U07.1) <b>(Inpatient Hospitalization with COVID-19 diagnosis)</b>	Inpatient hospital stay	Any	De-duplicate occurrences of the same event group on the same day
7	Non-Critical COVID-19 Combo (COVID-19 Diagnosis (U07.1) Inpatient WITHOUT (ICU or ECMO or Mech Vent or Renal Replacement Combo)	Inpatient hospital stay	Any	De-duplicate occurrences of the same event group on the same day
8	U07.1 inpatient AND (ICU or ECMO or Mech Vent or Renal Replacement Combo) Critical COVID-19 COMBOS1	Inpatient hospital stay	Any	De-duplicate occurrences of the same event group on the same day
9	Inpatient Death - defined using the "Encounter" table	Inpatient hospital stay (IP*)	N/A	N/A

**Appendix J. Specificatinos Defining Parameters in this Request**

10	Overall, COVID-19 Hospitalization (30 day risk window)	Race (will be further defined in the functional specs)	COVID-19 diagnosis (U07.1) (Inpatient Hospitalization with COVID-19 diagnosis)	01: First valid episode during query period	None	None	Inpatient Hospital Setting (IP*)	Any	Y	31	N/A
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ICD-9, ICD-10, HCPCS, and CPT codes are provided by Optum360.  
 NDC codes are checked against First Data Bank's FDB MedKnowledge®.  
 1Critical COVID-19 Combos are defined as either Critical COVID-19 OR Critical COVID-19 RRT combo.

**Appendix J. Specificatinos Defining Parameters in this Request**

10	Death - defined using the "Death" table OR the "Encounter" table	Any care setting	N/A	N/A
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**Appendix K. Specifications Defining Baseline Characteristics in this Request**

**Baseline Characteristics**

Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period
<b>Recorded History Of Prior to Index Event (-183, -1):</b>					
Asthma	Any care setting	Any	-183	-1	1
Any Cancer	Any care setting	Any	-183	-1	1
Chronic Obstructive Pulmonary Disease (COPD)	Any care setting	Any	-183	-1	1
Obesity	Any care setting	Any	-183	-1	1
Chronic Kidney Disease	Any care setting	Any	-183	-1	1
Diabetes Mellitus	Any care setting	Any	-183	-1	1
Hypertension	Any care setting	Any	-183	-1	1
Liver Disease	Any care setting	Any	-183	-1	1
Vascular Disease	Any care setting	Any	-183	-1	1
Congestive Heart Failure	Any care setting	Any	-183	-1	1
Coronary Artery Disease	Any care setting	Any	-183	-1	1
Solid Organ or Stem Cell Transplant	Any care setting	Any	-183	-1	1
Solid Organ Transplant	Any care setting	Any	-183	-1	1
Blood Stem Cell Transplant	Any care setting	Any	-183	-1	1
HIV	Any care setting	Any	-183	-1	1
Smoking	Any care setting	Any	-183	-1	1
Alcohol or Drug Abuse	Any care setting	Any	-183	-1	1
Alcohol Use/Abuse	Any care setting	Any	-183	-1	1
Drug Abuse/Dependence	Any care setting	Any	-183	-1	1
Neurologic Conditions <sup>a</sup>	Any care setting	Any	-183	-1	1
Sickle Cell Disease	Any care setting	Any	-183	-1	1
Pulmonary Conditions <sup>b</sup> (including ARDS, Acute Resp Failure, Pneumonia, Chronic Resp Failure)	Any care setting	Any	-183	-1	1
Cystic Fibrosis	Any care setting	Any	-183	-1	1
Interstitial Lung Disease	Any care setting	Any	-183	-1	1
Autoimmune Conditions <sup>c</sup>	Any care setting	Any	-183	-1	1
Adult BMI: 19.9 or less (Z68.1)	Any care setting	Any	-183	-1	1
Adult BMI: 20-29 (Z68.2)	Any care setting	Any	-183	-1	1
Adult BMI: 30-39 (Z68.3)	Any care setting	Any	-183	-1	1
Adult BMI: 40 or greater (Z68.4)	Any care setting	Any	-183	-1	1
<b>Recorded Use Of Prior to Index Event (-183, -1):</b>					
Immunosuppressants	Any care setting	Any	-183	-1	1
Immune Modulators	Any care setting	Any	-183	-1	1
Glucocorticoids - Systemic	Any care setting	Any	-183	-1	1
Glucocorticoids - Non-systemic (includes inhaled, ophthalmic, topical)	Any care setting	Any	-183	-1	1
Glucocorticoids - Inhaled	Any care setting	Any	-183	-1	1
Glucocorticoids - Ophthalmic	Any care setting	Any	-183	-1	1

**Appendix K. Specifications Defining Baseline Characteristics in this Request**

Baseline Characteristics					
Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period
Glucocorticoids - Topical	Any care setting	Any	-183	-1	1
Chemotherapy	Any care setting	Any	-183	-1	1
<b>Concurrent Use Of (-30, 0):</b>					
Angiotensin Converting Enzyme (ACE) Inhibitors	Any care setting	Any	-30	0	1
Angiotensin II Receptor Blockers (ARBs)	Any care setting	Any	-30	0	1
Vasopressors	Any care setting	Any	-30	0	1
<b>Comorbidity (-183,-1):</b>					
Charlson Co-Morbidity Index	N/A	N/A	-183	-1	N/A
<b>Symptoms (-1,14):</b>					
Fever	Any care setting	Any	-1	14	1
Cough	Any care setting	Any	-1	14	1
Dyspnea/shortness of breath	Any care setting	Any	-1	14	1
Abdominal Pain and Diarrhea	Any care setting	Any	-1	14	1
Myalgia	Any care setting	Any	-1	14	1
Malaise/Fatigue	Any care setting	Any	-1	14	1
Smell/Taste Disturbance	Any care setting	Any	-1	14	1
Nasal congestion	Any care setting	Any	-1	14	1
Sore throat	Any care setting	Any	-1	14	1
Nausea or vomiting	Any care setting	Any	-1	14	1
Headache	Any care setting	Any	-1	14	1
Multi-system Inflammatory Syndrome	Any care setting	Any	-1	14	1
<b>COVID or Critical COVID-19 Criteria<sup>d</sup></b>					
COVID Positive Diagnosis (just U07.1 dx code, no lab)	Any care setting	N/A	-7	7	1
Intensive Care Unit (ICU)	Inpatient	N/A	0	0	1
ECMO	Inpatient	N/A	0	0	1
Mechanical Ventilation	Inpatient	N/A	0	0	1
Renal Replacement Combo	Inpatient	N/A	0	0	1

<sup>a</sup>As defined in the COVID-19 Natural History Protocol

<sup>b</sup>As defined in the HCA Natural History Protocol (Pulmonary Complications)

<sup>c</sup>Autoimmune disorders is defined as having one of the following conditions: Sarcoidosis, Rheumatoid Arthritis, Lupus, Sjogren's Syndrome, Vasculitis, Scleroderma/Systemic Sclerosis, Addison's Disease, Myasthenia Gravis

<sup>d</sup>Non-mutually exclusive counts for those at index who satisfied the Critical COVID-19 Combo criteria.

**Appendix L. Specifications Defining Custom Covariates, Urbanicity and Socioeconomic Status Proxies, in this Request**

**Custom Covariates**

Variable Name	Covariate Description	Derivation of Variable	Evaluation period start	Evaluation period end	Appear in Baseline Table?	Stratify Effect Estimates or Adjust in Model?	Categorical or Continuous Variable?	Reference Level
MED_HOUSE_INC	Median Household Income	Information pulled from the ACS survey, used the same method as the Sertraline query (QF-1733), matched on zip code of residence	0	0	Yes	Adjust	Continuous	N/A
MED_PROP_VAL	Median Property Value	Information pulled from the ACS survey, used the same method as the Sertraline query (QF-1733), matched on zip code of residence	0	0	Yes	Adjust	Continuous	N/A
PERC_UNEMPL	Percent Unemployment	Information pulled from the ACS survey, used the same method as the Sertraline query (QF-1733), matched on zip code of residence	0	0	Yes	Adjust	Continuous	N/A
HOUSE_INC_KNOWN	Median Household Income Known	Information pulled from the ACS survey, used the same method as the Sertraline query (QF-1733), matched on zip code of residence	0	0	Yes	Do Not Adjust	Categorical	N/A
PROP_VAL_KNOWN	Median Property Value Known	Information pulled from the ACS survey, used the same method as the Sertraline query (QF-1733), matched on zip code of residence	0	0	Yes	Do Not Adjust	Categorical	N/A
PERC_UNEMPL_KNOWN	Percent Unemployment Known	Information pulled from the ACS survey, used the same method as the Sertraline query (QF-1733), matched on zip code of residence	0	0	Yes	Do Not Adjust	Categorical	N/A
ALL_SES_KNOWN	All SES Indicators Known	Information pulled from the ACS survey, used the same method as the Sertraline query (QF-1733), matched on zip code of residence	0	0	Yes	Do Not Adjust	Categorical	N/A
URBAN_CAT	Urbanicity	Used the same look-up file as used in the Doxycycline query (QF-2946), matched on zip code of residence	0	0	Yes	Stratify	Categorical	N/A

**Appendix M. Specifications Defining the Comorbidity Score in this Request**

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Comorbidity Score	
Evaluation period start	Evaluation period end
-183	-1



**Appendix N. Specifications Defining Utilization in this Request**

Utilization				
Medical utilization evaluation period start	Medical utilization evaluation period end	Medical visit care settings	Drug utilization evaluation period start	Drug utilization evaluation period end
-183	-1	*Inpatient hospital stay; *Non-acute institutional stay; *Emergency department encounter; *Ambulatory visit; *Other ambulatory visit; *Any care setting	-183	-1

**Appendix O. Specifications Defining the Combo Outcomes in this Request**

Combo			
Combination description	Combination date	Principal diagnosis for each combination component	
Critical COVID-19 (COVCRT)	U07.1 (inpatient) <b>AND</b> {ICU <u>or</u> ECMO <u>or</u> Mech Vent} (inpatient setting) on the Same Day	ADATEB - ADATEB (bounded on admit date of hospitalization). ADATE will be used as the date of the combo.	*Any
Critical COVID-19 (RRTPX)	U07.1 (inpatient) <b>AND</b> (Renal Repl DX Code AND Renal Repl PX Code) (inpatient setting) on the Same Day	ADATEB - ADATEB (bounded on admit date of hospitalization). ADATE will be used as the date of the combo.	*Any
Renal Replacement Combo (RRTONL)	Renal Repl DX Code <b>AND</b> Renal Repl PX Code (inpatient setting) on the Same Day	ADATEB - ADATEB (bounded on admit date of hospitalization). ADATE will be used as the date of the combo.	*Any
Non-Critical COVID-19 (NOTCRT)	U07.1 dx code (inpatient care setting) occurs <b>AND NOT</b> {ICU <u>or</u> ECMO <u>or</u> Mech Vent <u>or</u> (Renal Replacement Combo) (inpatient setting)} on the Same Day	ADATEB - ADATEB (bounded on admit date of hospitalization). ADATE will be used as the date of the combo.	*Any

**Appendix P. Specifications Defining the Model Covariates in this Request**

**Model Covariates**

Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period	Stratify Effect Estimates or Adjust in Model?	Categorical or Continuous Variable?	Reference Level
Race	N/A	N/A	0	0	1	Main Independent Variable	Categorical	White
Urbanicity (Urban, Rural, Suburban, Unknown)	N/A	N/A	0	0	1	Stratify	Categorical	N/A
Age	N/A	N/A	0	0	1	Adjust	Continuous	N/A
Sex	N/A	N/A	0	0	1	Adjust	Categorical	Male
Asthma	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Cancer	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Chronic Obstructive Pulmonary Disease (COPD)	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Obesity	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Chronic Kidney Disease	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Diabetes Mellitus	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Hypertension	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Liver Disease	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)
Vascular Disease	Any care setting	Any	-183	-1	1	Adjust	Categorical	0 (not having the condition)

**Appendix P. Specifications Defining the Model Covariates in this Request**

Model Covariates								
Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period	Stratify Effect Estimates or Adjust in Model?	Categorical or Continuous Variable?	Reference Level
Congestive Heart Failure	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Coronary Artery Disease	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Solid Organ Transplant	Any care setting	Any	-183	-1	1	<b>Do not Adjust</b>	Categorical	0 (not having the condition)
Stem Cell Transplant	Any care setting	Any	-183	-1	1	<b>Do not Adjust</b>	Categorical	0 (not having the condition)
HIV	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Smoking	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Alcohol Use/Abuse	Any care setting	Any	-183	-1	1	<b>Do not Adjust</b>	Categorical	0 (not having the condition)
Neurological Conditions <sup>a</sup>	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Sickle Cell Disease	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Substance Abuse Disorder (Drug Abuse/Dependence)	Any care setting	Any	-183	-1	1	<b>Do not Adjust</b>	Categorical	0 (not having the condition)
Pulmonary Conditions <sup>b</sup>	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Cystic Fibrosis	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)

**Appendix P. Specifications Defining the Model Covariates in this Request**

Model Covariates								
Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period	Stratify Effect Estimates or Adjust in Model?	Categorical or Continuous Variable?	Reference Level
Interstitial Lung Disease	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Immunosuppressants	N/A	N/A	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Immune Modulators	N/A	N/A	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Glucocorticoids - Systemic	N/A	N/A	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Glucocorticoids - Non-systemic (includes inhaled, ophthalmic, topical)	N/A	N/A	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Chemotherapy	N/A	N/A	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Angiotensin Converting Enzyme (ACE) Inhibitors	N/A	N/A	-30	0	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Angiotensin II Receptor Blockers (ARBs)	N/A	N/A	-30	0	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Vasopressors	N/A	N/A	-30	0	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Fever	Any care setting	Any	-1	14	1	<b>Do not Adjust</b>	Categorical	0 (not having the condition)
Cough	Any care setting	Any	-1	14	1	<b>Do not Adjust</b>	Categorical	0 (not having the condition)
Dyspnea/shortness of breath	Any care setting	Any	-1	14	1	<b>Do not Adjust</b>	Categorical	0 (not having the condition)

**Appendix P. Specifications Defining the Model Covariates in this Request**

Model Covariates								
Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period	Stratify Effect Estimates or Adjust in Model?	Categorical or Continuous Variable?	Reference Level
Diarrhea	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Myalgia	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Malaise/Fatigue	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Smell/Taste Disturbance	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Nasal congestion	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Sore throat	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Nausea or vomiting	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Headache	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
Multi-system Inflammatory Syndrome	Any care setting	Any	-1	14	1	Do not Adjust	Categorical	0 (not having the condition)
<b>Autoimmune Conditions<sup>c</sup></b>	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Alcohol or Drug Abuse	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)
Solid Organ or Stem Cell Transplant	Any care setting	Any	-183	-1	1	<b>Adjust</b>	Categorical	0 (not having the condition)

**Appendix P. Specifications Defining the Model Covariates in this Request**

Model Covariates								
Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period	Stratify Effect Estimates or Adjust in Model?	Categorical or Continuous Variable?	Reference Level
Mean number of ambulatory encounters (AV)	N/A	N/A	-183	-1	N/A	<b>Do not Adjust</b>	Continuous	N/A
Mean number of emergency room encounters (ED)	N/A	N/A	-183	-1	N/A	<b>Do not Adjust</b>	Continuous	N/A
Mean number of filled RX	N/A	N/A	-183	-1	N/A	<b>Do not Adjust</b>	Continuous	N/A
Mean number of inpatient hospital encounters (IP)	N/A	N/A	-183	-1	N/A	<b>Do not Adjust</b>	Continuous	N/A
Mean number of non-acute institutional encounters (IS)	N/A	N/A	-183	-1	N/A	<b>Do not Adjust</b>	Continuous	N/A
Mean number of other ambulatory encounters (OA)	N/A	N/A	-183	-1	N/A	<b>Do not Adjust</b>	Continuous	N/A
Average Median Household Income	N/A	N/A	0	0	N/A	<b>Adjust</b>	Continuous	N/A
Average Median Home Value	N/A	N/A	0	0	N/A	<b>Adjust</b>	Continuous	N/A
Average Percent of Unemployment	N/A	N/A	0	0	N/A	<b>Adjust</b>	Continuous	N/A
Charlson/Elixhauser Combined Comorbidity Index	N/A	N/A	-183	-1	N/A	<b>Adjust</b>	Continuous	N/A
Mean number of generics	N/A	N/A	-183	-1	N/A	<b>Do not Adjust</b>	Continuous	N/A

**Appendix P. Specifications Defining the Model Covariates in this Request**

Model Covariates								
Covariate	Care setting	Principal diagnosis position	Evaluation period start	Evaluation period end	Number of instances the covariate should be found in evaluation period	Stratify Effect Estimates or Adjust in Model?	Categorical or Continuous Variable?	Reference Level
Mean number of unique drug classes	N/A	N/A	-183	-1	N/A	Do not Adjust	Continuous	N/A

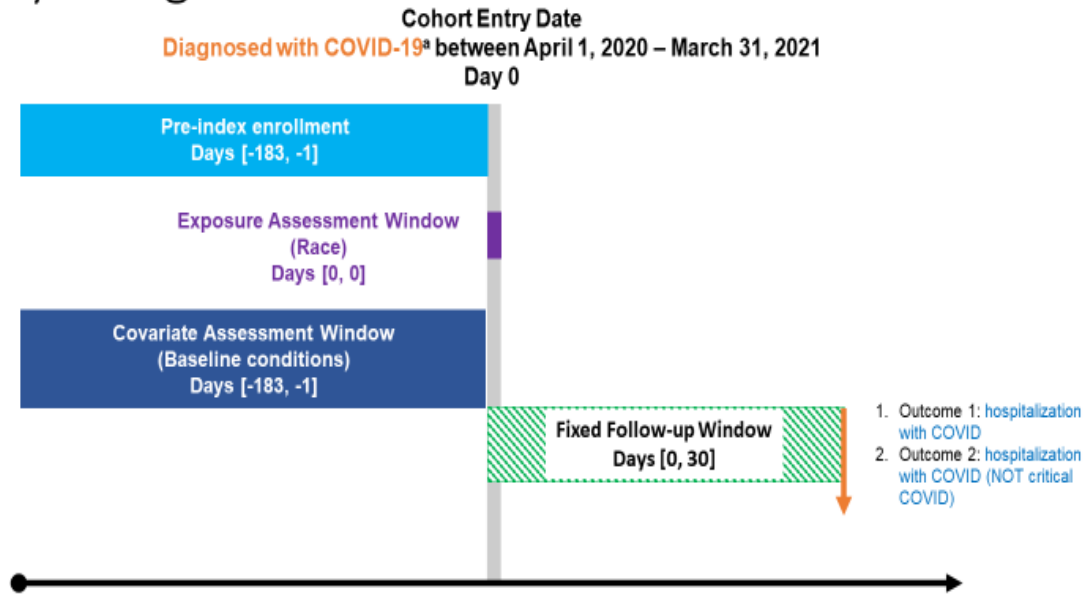
<sup>a</sup>As defined in the COVID-19 Natural History Protocol

<sup>b</sup>As defined in the HCA Natural History Protocol (Pulmonary Complications)

<sup>c</sup>Autoimmune disorders is defined as having one of the following conditions: Sarcoidosis, Rheumatoid Arthritis, Lupus, Sjogren's Syndrome, Vasculitis, Scleroderma/Systemic Sclerosis, Addison's Disease, Myasthenia Gravis

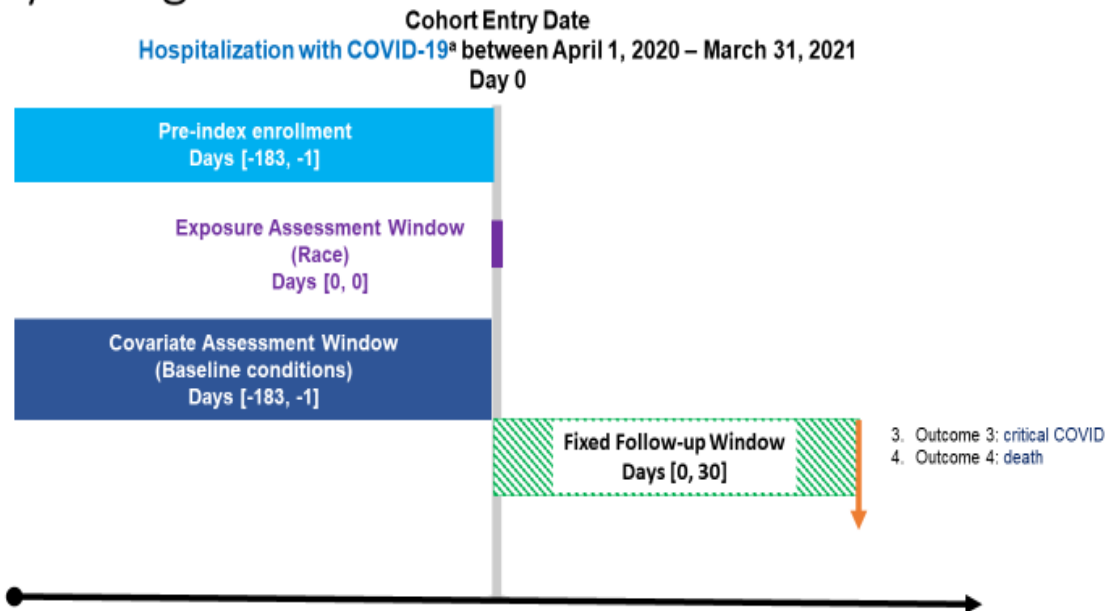


# Study Design



a. Diagnosed with COVID = PCR positive for SARS COV-2 or U07.1 diagnosis code in any setting

# Study Design



a. Hospitalization with COVID = U07.1 diagnosis code in the inpatient care setting;