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
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Overview for Request cder_mpl2r_wp008

Request ID: cder_mpl2r_wp008_nsdp_v03

Request Description: The goal of this request was to assess the risk of acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to one another, to long-acting insulins, to pioglitazone, and to second-generation sulfonylureas in the Sentinel Distributed Database (SDD).

The request had two components: the "replication" analysis aimed to recreate the final analysis from a protocol-based assessment (PBA) of these diabetes drug exposures and health outcomes, while the "updated" analysis featured the same drug comparisons and outcomes but was run on the latest available data and accounted for present-day drugs and analysis tool capabilities.[1,2,3]

Following is a list of reports for the "replication" analysis. The report contained in this file is bolded.

Report 1 investigates AMI incidence among new users of saxagliptin and comparator drugs under "replication" analytic conditions.
Report 2 investigates AMI incidence among new users of sitagliptin and comparator drugs under "replication" analytic conditions.
Report 3 investigates hHF incidence among new users of saxagliptin and comparator drugs under "replication" analytic conditions.
Report 4 investigates hHF incidence among new users of sitagliptin and comparator drugs under "replication" analytic conditions.

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Analysis, version 7.3.4

Data Source: We used data from August 1, 2009 to July 31, 2014 from 13 Data Partners contributing to the SDD. We distributed this request on September 10, 2019. See Appendix A for a list of dates of available data for each Data Partner.

Study Design: This query used a retrospective new-user cohort design. We reported effect estimates for overall populations and for subgroups defined by prior diagnosis of cardiovascular disease (CVD) status, sex, and age group.

Exposures of Interest: The five exposures of interest for this report were paired below into four comparisons. We defined each exposure using National Drug Codes (NDCs). Please see Appendix B for generic names of medical products used to define exposures in this request.

Comparison 1: Saxagliptin vs. sitagliptin
Comparison 2: Saxagliptin vs. pioglitazone
Comparison 3: Saxagliptin vs. long-acting insulins
Comparison 4: Saxagliptin vs. second-generation sulfonylureas

Cohort Eligibility Criteria: We included individuals in our analysis if they were continuously enrolled in health plans with medical and drug coverage for at least 365 days prior to their first qualifying (index) dispensing date, during which gaps in coverage of up to 45 days were allowed. We excluded members who had claims (NDCs) indicating use of either saxagliptin or the comparator drug in the 365 days prior to their index date. Generic names of medical products for incidence criteria are shown in Appendix B. We restricted our analysis to patients classified as male or female sex (excluding "other" and "missing") who were at least 18 years of age at index. We reported outcomes according to the following age categories: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, and 85 years or greater. This analysis captured only the first valid index date during the query period.

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Inclusion and Exclusion Criteria: For all comparisons, we included patients with either a diabetes diagnosis or a non-short-acting insulin diabetes medication dispensing in the 365 days prior to the index dispensing date. We excluded patients with gestational diabetes, defined as a female patient with a diagnosis signaling pregnancy (such as delivery, miscarriage, or ongoing pregnancy) on the index date or in the 365 days prior to index date (in addition to the aforementioned diabetes diagnosis inclusion criterion). For the pioglitazone comparison only, we additionally excluded individuals with evidence of congestive heart failure in the 365 days prior to index. For the long-acting insulin comparison only, we additionally excluded patients with no diabetes medication other than short-acting insulin in the 365 days prior to index. We defined all inclusion and exclusion criteria using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes and National Drug Codes (NDCs). Please see Appendix C for a list of diagnosis codes and Appendix D for generic names of medical products used to define inclusions and exclusions in this request.

Stockpiling Algorithm: For same-day dispensings of the same stockpiling group, we set the number of days supplied to equal the sum of days supplied over these dispensings. We handled the amount supplied value for same-day dispensings in the same way. In situations where a dispensing occurred during the supply period for the previous dispensing, we pushed forward the date of this dispensing as if there were no overlap between consecutive dispensing's days supplied. Finally, we only allowed a dispensing to contribute a maximum of 120 days to an episode.

Follow-Up Time: Follow-up time began on the date of first dispensing and continued for the duration of the exposure episode. We defined exposure episode length using outpatient pharmacy dispensings' days supplied values to create a sequence of continuous exposure. We considered exposure episodes to be continuous across dispensings if gaps in days supplied were less than 33% of the previous dispensing length. Follow-up continued until the last day supplied plus a 12-day extension period, or until the first occurrence of any of the following: 1) disenrollment; 2) death; 3) the end of the query period; 4) the outcome of interest; or 5) use of the comparison drug.

Outcome of Interest: The outcome of interest for this was hHF. We defined the outcome as a primary diagnosis in an inpatient (IP) encounter using ICD-9-CM discharge diagnosis codes. We excluded patients from the analysis if they had a primary diagnosis of hHF or AMI in an IP encounter in the 60 days prior to their index date. See Appendix E for a list of ICD-9-CM diagnosis codes used to define hHF and AMI in this request.

Patient Characteristics: We generated covariates for three purposes: 1) to describe the characteristics of our analytic cohorts; 2) to include in our propensity score (PS) model; and 3) to define subgroups for stratified analyses by presence of prior CVD conditions. We defined the baseline period for descriptive variables as the 365 days prior to the exposure of interest, not including the index date, except in describing prior AMI, prior hHF, and prior encounters (see details below). We also reported concurrent use of drugs, defined as evidence of use on index date.

Descriptive and propensity score, baseline only

We assessed the following covariates during only the baseline period and included them in our PS models: age, sex, year of treatment initiation, Combined Comorbidity Index[4], prior AMI in the past 61-365 days (narrow definition), other ischemic heart disease, congestive heart failure, other heart disease, stroke (broad definition), stroke (narrow definition), peripheral arterial disease, coronary revascularization procedures (defined as coronary artery bypass graft or percutaneous coronary intervention), carotid revascularization procedures (defined as carotid bypass or carotid endarterectomy, stenting, angioplasty or atherectomy), lower extremity revascularization (defined as lower extremity bypass, lower extremity amputation, lower extremity endarterectomy, stenting, angioplasty or atherectomy), asthma, cancer (excluding non-melanoma skin cancer), chronic kidney disease (excluding end-stage renal disease), chronic obstructive pulmonary disease, dementia, depression, end-stage renal disease, fracture, human immunodeficiency virus or acquired immunodeficiency syndrome, hyperlipidemia or lipid disorder, hypertension, hypoglycemia, obesity (or weight gain), osteoporosis, peripheral neuropathy, tobacco use, non-acute institutional stay (IS encounter) in prior year, any hospitalization (IP encounter) within prior 30 days, any hospitalization within past 31-365 days, any emergency department (ED encounter) visit within prior 30 days, any emergency department visit within prior 31-365 days, number of outpatient visits (AV encounter) in prior year, and number of unique medications dispensed in prior year.

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Descriptive and propensity score, baseline and concurrent use

We assessed the following drug use covariates during the baseline period and, separately, on index date only. We included both baseline and index values of these variables in our PS models: alpha-glucosidase inhibitors, biguanides, other dipeptidyl peptidase-4 (DPP-4) inhibitors, meglitinides, saxagliptin, sitagliptin, pioglitazone, first-generation sulfonylureas, second-generation sulfonylureas, long-acting insulin, short-acting insulin, other thiazolidinediones, other anti-diabetics (defined as glucagon-like peptide-1 (GLP-1) analogues, amylin analog-types or canagliflozin), angiotensin-converting enzyme (ACE) inhibitors, alpha blockers, angiotensin receptor blockers (ARB), beta blockers, calcium channel blockers, direct vasodilators, loop diuretics, aldosterone receptor agonists (ARAs), non-ARA potassium sparing diuretics, thiazide diuretics, renin inhibitors, central alpha-2 receptor agonists, reserpine and derivatives, and lipid-lowering agents. We included in each PS model all exposure drugs of interest other than the treatment and comparator under assessment. For example, the PS model for the saxagliptin versus long-acting insulin comparison included sitagliptin, pioglitazone, and second-generation sulfonylureas, but not long-acting insulins. Saxagliptin is an exception to this, and its handling is detailed below.

Additionally, we grouped a selection of antidiabetic agents into two aggregate "other anti-diabetics" variables based on the previous PBA, one describing use during the baseline period and one describing use on index day. We included both variables in our PS model. These aggregate variables included: alpha-glucosidase inhibitors, other DPP-4 inhibitors, meglitinides, first-generation sulfonylureas, saxagliptin, and other anti-diabetics (defined as GLP-1 analogues, amylin analog-types or canagliflozin). In analyses where saxagliptin was an exposure of interest, we did not include saxagliptin in the definitions of "other anti-diabetics" at baseline or at index.

Similarly, we identified use of the following anti-hypertensive drugs and grouped them into two aggregate variables, one describing use during the baseline period and one describing use on index day. We included both variables in our PS model. The aggregate variables include: central alpha-2 receptor agonists, alpha blockers, ARAs, potassium sparing diuretics, loop diuretics, direct vasodilators, renin inhibitors, reserpine and derivatives, and direct vasodilators.

Descriptive only, baseline only

We assessed the following descriptive variables during the baseline period only and did not include them in PS models: each of the components that make up coronary revascularization procedures, carotid revascularization procedures, lower extremity revascularization procedures covariates, aggregate of all cardiovascular disease covariates previously listed, aggregate of all comorbidity covariates previously listed, aggregates of all anti-diabetic medication in the baseline period and on index day, aggregates of all anti-hypertensive agents in the baseline period and on index day, prior AMI in the previous 61 to 365 days (broad definition), and prior hHF in the previous 61 to 365 days.

Prior CVD subgroups

We classified patients into "presence of prior CVD" and "no prior CVD" subgroups for stratified analyses. We defined presence of prior CVD conditions according to the following variables, assessed during the baseline period of 365 days prior to the exposure of interest: prior AMI (broad), other ischemic heart disease, heart failure, other heart disease, stroke (broad), peripheral arterial disease, all coronary revascularization procedures, all carotid revascularization procedures, and all lower extremity revascularization.

Care settings

We captured diagnoses and procedures from IP or ambulatory visit (AV) care settings, except for stroke (narrow definition), AMI (narrow definition), and hHF, which required a principal diagnosis in the IP care setting.

Codes

We defined all conditions using ICD-9-CM diagnosis and procedure codes, Healthcare Common Procedure Coding System (HCPCS) codes, and Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III) codes. We defined drug dispensings using NDCs. Please see Appendix F for a list of diagnosis and procedure codes and Appendix G for generic names of medical products used to identify covariates in this request.

Overview for Request cder_mpl2r_wp008

Analysis: We estimated propensity scores using the covariates listed above, and adjusted our analytic models via PS matching using 1:1 nearest neighbor matching without replacement using a caliper of 0.01. Each comparator patient was matched one time, at most, to a treatment patient. We estimated adjusted hazard ratios and 95% confidence intervals using Cox regression stratified on Data Partner site (and matched sample in the conditional analysis). We performed subgroup analyses by prior CVD status, sex, and age group (18-64 years, 65 or older). In subgroup analyses, we re-matched patients within subgroups.

Please see Appendices H.1-H.8 for the specifications of parameters for this request and Appendix I for the list of covariates and their use in the PS models and subgroup definition. Note that only comparisons 8 through 11 apply to this report.

Limitations: 1) As with all observational studies, this evaluation was limited in its ability to control for all sources of potential bias. 2) Exposures, outcomes, inclusions, exclusions, episode truncation criteria, and covariates may be misclassified due to imperfect identification algorithms.

Notes: Please contact the Sentinel Operations Center (info@sentinelsystem.org) for questions and to provide comments/suggestions for future enhancements to this document.

[1]Toh S, Reichman M, Graham D, Hampp C, Zhang R, Butler M, Iyer A, Rucker M, Pimentel M, Hamilton J, Lendle S, Fireman B. Prospective Postmarketing Surveillance of Acute Myocardial Infarction in New Users of Saxagliptin: A Population-Based Study. Diabetes Care 2018;41:39-48

[2]Toh S, Hampp C, Reichman M, Graham D, Balakrishnan S, Pucino F, Hamilton J, Lendle S, Iyer A, Rucker M, Pimentel M, Nathwani N, Griffin M, Brown N, Fireman B. Risk for Hospitalized Heart Failure Among New Users of Saxagliptin, Sitagliptin, and Other Antihyperglycemic Drugs: A Retrospective Cohort Study. Ann Intern Med. 2016;164:705-714.

[3]Fireman B, Toh S, Butler M, Go A, Joffe H, Graham D, Nelson J, Daniel G, Selby J. A protocol for active surveillance of acute myocardial infarction in association with the use of a new antidiabetic pharmaceutical agent. Pharmacoepidemiol Drug Saf. 2012 Jan; 21 Suppl 1: 282-90.

[4]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

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

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).

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.

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.

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

Glossary of Terms for Analyses Using Propensity Score Analysis (PSA) Tool*

Covariate - requester defined binary variable to include in the propensity score estimation model (e.g., diabetes, heart failure, etc.) during requester-defined lookback period. Requester may also choose to add any of the following categorical, continuous, or count metrics to the propensity score estimation model:

1. Age (continuous)
2. Sex
3. Time period (i.e., monitoring period for sequential analyses)
4. Year of exposure
5. Comorbidity score
6. Medical utilization – number of inpatient stays
7. Medical utilization – number of institutional stays
8. Medical utilization – number of emergency department visits
9. Medical utilization – number of outpatient visits
10. Health care utilization – number of other ambulatory encounters (e.g., telemedicine, email consults)
11. Drug utilization – number of dispensings
12. Drug utilization – number of unique generics dispensed
13. Drug Utilization – number of unique drug classes dispensed

Covariate Evaluation Window - specified number of days relative to index date to evaluate the occurrence of covariates of interest. Note: members are required to have continuous enrollment during the covariate evaluation window, regardless of the value included in the "Continuous enrollment before exposure" field.

Individual Level Data Return - program may return individual-level, de-identified datasets to the Sentinel Operations Center (SOC). While the datasets contain a single row per patient for each specified analysis, patient identifiers such as a patient ID are not included in the output. Individual-level datasets are returned to the SOC, aggregated, and used to calculate effect estimates via Cox (proportional hazards) regression.

Mahalanobis Distance - provides a measure of balance across all variables while accounting for their correlation.

Matching Caliper - maximum allowed difference in propensity scores between treatment and control patients. Requester may select any caliper (e.g., 0.01, 0.025, and 0.05).

Matching Ratio - patients in exposed and comparator groups are nearest neighbor matched by a 1:1 or 1:n (up to 10) matching ratio.

Matched Conditional and Unconditional Analysis - in a conditional matched analysis, a Cox model, stratified by Data Partner site and matched set, is run on the matched population. This can be done for both the both 1:1 and 1:n matched cohorts. In an unconditional analysis, a Cox model, stratified by Data Partner site only, is run on the matched population. This can be done for the 1:1 matched cohort only.

Propensity Score Stratification - option to stratify propensity scores based on requester-defined percentiles in the unmatched population. In a stratified analysis, a Cox model, stratified by Data Partner site, is run on the stratified population. Note that all patients identified in exposure and comparator cohorts are used in the analysis.

PSM Tool - performs effect estimation by comparing exposure propensity-score matched parallel new user cohorts. Propensity score estimation and matching are conducted within each Sentinel Data Partner site via distributed programming code; data are returned to the SOC, aggregated, and used to calculate effect estimates.

Risk-set Level Data Return - alternative to the patient-level data return approach. In this approach, the PSM tool will produce de-identified, risk-set level datasets instead of or in addition to individual-level output. Whereas each observation in the patient-level datasets represents one patient in the cohort, each observation in the risk set dataset represents one event. Risk sets are created at the Data Partner site, returned to the SOC, aggregated, and used to calculate effect estimates via case-centered logistic regression.

Subgroup Analysis - may be conducted using any requester-defined covariates. Subgroup analyses may be performed in the unmatched and the matched population.

Glossary of Terms for Analyses Using Propensity Score Analysis (PSA) Tool*

Zero Cell Correction - indicator for whether to screen variables with a zero correction added to each cell in the confounder/outcome 2x2 table. Recommended when the number of exposed outcomes is fewer than 150.

*all terms may not be used in this report

Table 1a. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	60,160	100.0%	197,490	100.0%	-	-
Demographics	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**		
Mean age (years)	57.7	11.0	59.6	11.8	-1.933	-0.169
Age (years)	**Number**	**Percent**	**Number**	**Percent**		
18-29	510	0.8%	1,578	0.8%	0.049	0.005
30-44	7,927	13.2%	22,679	11.5%	1.693	0.052
45-54	16,491	27.4%	47,652	24.1%	3.283	0.075
55-64	20,337	33.8%	61,691	31.2%	2.567	0.055
65-74	9,935	16.5%	40,116	20.3%	-3.799	-0.098
75-84	4,143	6.9%	19,184	9.7%	-2.827	-0.103
85+	817	1.4%	4,590	2.3%	-0.966	-0.072
Sex						
Female	26,388	43.9%	89,119	45.1%	-1.263	-0.025
Male	33,772	56.1%	108,371	54.9%	1.263	0.025
Year						
2009	1,189	2.0%	19,101	9.7%	-7.695	-0.333
2010	11,544	19.2%	44,192	22.4%	-3.188	-0.079
2011	19,552	32.5%	54,466	27.6%	4.921	0.107
2012	17,726	29.5%	48,799	24.7%	4.755	0.107
2013	10,146	17.2%	30,907	16.0%	1.175	0.032
2014	3	2.4%	25	1.3%	1.052	0.078
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	501	0.8%	2,249	1.1%	-0.306	-0.031
Acute myocardial infarction prior to 60 days before index date (narrow)	219	0.4%	908	0.5%	-0.096	-0.015
Acute myocardial infarction (broad)	581	1.0%	2,800	1.4%	-0.452	-0.042
Hospitalized heart failure prior to 60 days before index date	212	0.4%	1,031	0.5%	-0.170	-0.026
Other ischemic heart disease	9,639	16.0%	37,828	19.2%	-3.132	-0.082
Congestive heart failure	3,009	5.0%	13,551	6.9%	-1.860	-0.079
Other heart disease	12,507	20.8%	47,202	23.9%	-3.111	-0.075
Stroke (broad)	3,294	5.5%	13,298	6.7%	-1.258	-0.053
Stroke (narrow)	219	0.4%	1,087	0.6%	-0.186	-0.028
Peripheral arterial disease	2,611	4.3%	9,920	5.0%	-0.683	-0.032
All coronary revascularization procedures	2,830	4.7%	11,840	6.0%	-1.291	-0.057

Table 1a. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Coronary artery bypass graft	1,290	2.1%	5,708	2.9%	-0.746	-0.048
Percutaneous coronary intervention	1,976	3.3%	7,988	4.0%	-0.760	-0.040
All carotid revascularization procedures	84	0.1%	347	0.2%	-0.036	-0.009
Carotid endarterectomy, etc.	83	0.1%	344	0.2%	-0.036	-0.009
Carotid bypass	1	0.0%	4	0.0%	0.000	-0.001
All lower extremity revascularization	257	0.4%	1,077	0.5%	-0.118	-0.017
Lower extremity endarterectomy, etc.	148	0.2%	638	0.3%	-0.077	-0.014
Lower extremity bypass	49	0.1%	220	0.1%	-0.030	-0.010
Lower extremity amputation	99	0.2%	445	0.2%	-0.061	-0.014
All Prior Cardiovascular Disease Covariates	18,621	31.0%	69,395	35.1%	-4.186	-0.089
Asthma	3,812	6.3%	13,432	6.8%	-0.465	-0.019
Cancer (excluding non-melanoma skin cancer)	3,664	6.1%	13,919	7.0%	-0.958	-0.039
Chronic kidney disease (excluding end stage renal disease)	3,272	5.4%	14,087	7.1%	-1.694	-0.070
Chronic obstructive pulmonary disease	3,606	6.0%	14,075	7.1%	-1.133	-0.046
Dementia	822	1.4%	4,448	2.3%	-0.886	-0.067
Depression	5,255	8.7%	18,881	9.6%	-0.825	-0.029
End stage renal disease (ESRD)	267	0.4%	1,562	0.8%	-0.347	-0.044
Fracture	1,590	2.6%	6,190	3.1%	-0.491	-0.029
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	69	0.1%	388	0.2%	-0.082	-0.021
Hyperlipidemia or lipid disorder	45,634	75.9%	147,693	74.8%	1.069	0.025
Hypertension	45,832	76.2%	151,478	76.7%	-0.518	-0.012
Hypoglycemia	2,145	3.6%	8,858	4.5%	-0.920	-0.047
Obesity (or weight gain)	10,629	17.7%	36,260	18.4%	-0.693	-0.018
Osteoporosis	2,416	4.0%	8,880	4.5%	-0.480	-0.024
Peripheral neuropathy	8,246	13.7%	30,049	15.2%	-1.509	-0.043
Tobacco use	3,937	6.5%	13,520	6.8%	-0.302	-0.012
All comorbidity covariates	55,971	93.0%	183,281	92.8%	0.232	0.009
History of use:						
Alpha-glucosidase inhibitors (B)	283	0.5%	1,114	0.6%	-0.094	-0.013
Biguanides (B)	43,160	71.7%	139,622	70.7%	1.044	0.023
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	348	0.6%	557	0.3%	0.296	0.045
Meglitinides (B)	1,069	1.8%	3,633	1.8%	-0.063	-0.005
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	-	0.0%	-	0.0%	0.000	-
Pioglitazone (B)	12,693	21.1%	40,745	20.6%	0.467	0.012

Table 1a. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
First-generation sulfonylureas (B)	14	0.0%	96	0.0%	-0.025	-0.013
Second-generation sulfonylureas (B)	25,282	42.0%	89,661	45.4%	-3.376	-0.068
Long-acting insulins (B)	6,957	11.6%	24,504	12.4%	-0.844	-0.026
Short-acting insulins (B)	2,403	4.0%	9,099	4.6%	-0.613	-0.030
Other thiazolidinediones (B)	2,551	4.2%	8,207	4.2%	0.085	0.004
Other anti-diabetics (B)	2,971	4.9%	7,827	4.0%	0.975	0.047
All anti-diabetics (B)	51,970	86.4%	171,299	86.7%	-0.352	-0.010
Angiotensin-converting enzyme inhibitors (B)	27,383	45.5%	92,642	46.9%	-1.393	-0.028
Alpha blockers (B)	1,156	1.9%	4,689	2.4%	-0.453	-0.031
Angiotensin receptor blockers (B)	15,104	25.1%	47,775	24.2%	0.915	0.021
Beta blockers (B)	16,204	26.9%	59,172	30.0%	-3.027	-0.067
Calcium channel blockers (B)	13,526	22.5%	46,650	23.6%	-1.138	-0.027
Direct vasodilators (B)	641	1.1%	2,538	1.3%	-0.220	-0.020
Loop diuretics (B)	6,052	10.1%	23,858	12.1%	-2.021	-0.064
Aldosterone receptor agonists (ARAs) (B)	1,387	2.3%	5,069	2.6%	-0.261	-0.017
Non-ARA potassium sparing diuretics (B)	1,913	3.2%	6,509	3.3%	-0.116	-0.007
Thiazide diuretics (B)	19,148	31.8%	63,038	31.9%	-0.091	-0.002
Renin inhibitors (B)	742	1.2%	1,814	0.9%	0.315	0.031
Central alpha-2 receptor agonists (B)	1,484	2.5%	4,974	2.5%	-0.052	-0.003
Reserpine and derivatives (B)	83	0.1%	251	0.1%	0.011	0.003
All anti-hypertensive agents (B)	45,829	76.2%	152,986	77.5%	-1.287	-0.030
Lipid lowering agents (B)	39,820	66.2%	132,234	67.0%	-0.767	-0.016
Alpha-glucosidase inhibitors (C)	160	0.3%	674	0.3%	-0.075	-0.014
Biguanides (C)	40,760	67.8%	133,372	67.5%	0.219	0.005
Other DPP-4 inhibitors (C)	95	0.2%	197	0.1%	0.058	0.016
Meglitinides (C)	675	1.1%	2,270	1.1%	-0.027	-0.003
Saxagliptin (C)	60,160	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	-	0.0%	197,490	100.0%	-100.000	-
Pioglitazone (C)	6,294	10.5%	22,365	11.3%	-0.863	-0.028
First-generation sulfonylureas (C)	8	0.0%	58	0.0%	-0.016	-0.011
Second-generation sulfonylureas (C)	18,737	31.1%	68,606	34.7%	-3.594	-0.077
Long-acting insulins (C)	4,542	7.5%	16,597	8.4%	-0.854	-0.032
Short-acting insulins (C)	1,062	1.8%	4,644	2.4%	-0.586	-0.041
Other thiazolidinediones (C)	744	1.2%	2,804	1.4%	-0.183	-0.016
Other anti-diabetics (C)	1,022	1.7%	2,477	1.3%	0.445	0.037
All anti-diabetics (C)	60,160	100.0%	197,490	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	21,273	35.4%	73,377	37.2%	-1.794	-0.037
Alpha blockers (C)	817	1.4%	3,336	1.7%	-0.331	-0.027

Table 1a. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Angiotensin receptor blockers (C)	12,530	20.8%	40,039	20.3%	0.554	0.014
Beta blockers (C)	12,733	21.2%	47,828	24.2%	-3.053	-0.073
Calcium channel blockers (C)	10,924	18.2%	38,386	19.4%	-1.279	-0.033
Direct vasodilators (C)	413	0.7%	1,802	0.9%	-0.226	-0.025
Loop diuretics (C)	3,852	6.4%	15,733	8.0%	-1.564	-0.061
Aldosterone receptor agonists (ARAs) (C)	928	1.5%	3,450	1.7%	-0.204	-0.016
Non-ARA potassium sparing diuretics (C)	1,224	2.0%	4,271	2.2%	-0.128	-0.009
Thiazide diuretics (C)	14,594	24.3%	48,477	24.5%	-0.288	-0.007
Renin inhibitors (C)	478	0.8%	1,237	0.6%	0.168	0.020
Central alpha-2 receptor agonists (C)	963	1.6%	3,249	1.6%	-0.044	-0.004
Reserpine and derivatives (C)	33	0.1%	140	0.1%	-0.016	-0.006
All anti-hypertensive agents (C)	40,229	66.9%	137,066	69.4%	-2.534	-0.054
Lipid lowering agents (C)	32,794	54.5%	111,313	56.4%	-1.853	-0.037
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	1,794	3.0%	9,278	4.7%	-1.716	-0.089
Any inpatient hospital encounter (IP visit) within prior 30 day	1,081	1.8%	8,712	4.4%	-2.614	-0.151
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	5,785	9.6%	23,579	11.9%	-2.323	-0.075
Any emergency room encounter (ED visit) within prior 30 days	1,936	3.2%	8,910	4.5%	-1.294	-0.067
Any emergency room encounter (ED visit) 31-365 days prior to index date	10,993	18.3%	39,635	20.1%	-1.796	-0.046
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	13.7	12.9	14.9	14.5	-1.221	-0.089
Mean number of emergency room encounters (ED)	0.3	1.0	0.4	1.1	-0.055	-0.051
Mean number of inpatient hospital encounters (IP)	0.1	0.5	0.2	0.7	-0.071	-0.117
Mean number of non-acute institutional encounters (IS)	0.1	0.5	0.1	0.7	-0.036	-0.063
Mean number of other ambulatory encounters (OA)	3.0	5.6	3.4	6.6	-0.331	-0.054
Mean number of unique drug classes	8.0	4.7	8.3	4.9	-0.240	-0.050
Mean number of generics	9.2	5.5	9.5	5.7	-0.285	-0.051
Mean number of filled prescriptions	36.8	28.3	38.2	29.5	-1.377	-0.048

Table 1b. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	59,966	100.0%	59,966	30.8%	-	-
Demographics	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**		
Mean age (years)	57.7	11.0	57.7	11.4	-0.067	-0.006
Age (years)	**Number**	**Percent**	**Number**	**Percent**		
18-29	507	0.8%	595	1.0%	-0.147	-0.015
30-44	7,908	13.2%	8,267	13.8%	-0.599	-0.018
45-54	16,438	27.4%	16,179	27.0%	0.432	0.010
55-64	20,260	33.8%	19,071	31.8%	1.983	0.042
65-74	9,909	16.5%	10,573	17.6%	-1.107	-0.029
75-84	4,132	6.9%	4,413	7.4%	-0.469	-0.018
85+	812	1.4%	868	1.4%	-0.093	-0.008
Sex						
Female	26,297	43.9%	26,427	44.1%	-0.217	-0.004
Male	33,669	56.1%	33,539	55.9%	0.217	0.004
Year						
2009	1,189	2.0%	1,188	2.0%	0.002	0.000
2010	11,501	19.2%	11,337	18.9%	0.273	0.007
2011	19,481	32.5%	19,636	32.7%	-0.258	-0.006
2012	17,670	29.5%	17,708	29.5%	-0.063	-0.001
2013	10,125	17.2%	10,097	17.1%	0.047	0.001
2014	-	0.0%	-	0.0%	0.000	-
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	500	0.8%	567	0.9%	-0.112	-0.012
Acute myocardial infarction prior to 60 days before index date (narrow)	218	0.4%	233	0.4%	-0.025	-0.004
Acute myocardial infarction (broad)	580	1.0%	659	1.1%	-0.132	-0.013
Hospitalized heart failure prior to 60 days before index date	211	0.4%	220	0.4%	-0.015	-0.003
Other ischemic heart disease	9,614	16.0%	9,603	16.0%	0.018	0.001
Congestive heart failure	2,996	5.0%	2,968	4.9%	0.047	0.002
Other heart disease	12,477	20.8%	12,516	20.9%	-0.065	-0.002
Stroke (broad)	3,283	5.5%	3,296	5.5%	-0.022	-0.001
Stroke (narrow)	214	0.4%	226	0.4%	-0.020	-0.003
Peripheral arterial disease	2,604	4.3%	2,550	4.3%	0.090	0.004
All coronary revascularization procedures	2,822	4.7%	2,877	4.8%	-0.092	-0.004
Coronary artery bypass graft	1,287	2.1%	1,331	2.2%	-0.073	-0.005

Table 1b. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Percutaneous coronary intervention	1,969	3.3%	1,970	3.3%	-0.002	0.000
All carotid revascularization procedures	82	0.1%	69	0.1%	0.022	0.006
Carotid endarterectomy, etc.	82	0.1%	69	0.1%	0.022	0.006
Carotid bypass	-	0.0%	1	0.0%	-0.002	-
All lower extremity revascularization	256	0.4%	277	0.5%	-0.035	-0.005
Lower extremity endarterectomy, etc.	148	0.2%	163	0.3%	-0.025	-0.005
Lower extremity bypass	49	0.1%	55	0.1%	-0.010	-0.003
Lower extremity amputation	98	0.2%	113	0.2%	-0.025	-0.006
All Prior Cardiovascular Disease Covariates	18,566	31.0%	18,621	31.1%	-0.092	-0.002
Asthma	3,796	6.3%	3,738	6.2%	0.097	0.004
Cancer (excluding non-melanoma skin cancer)	3,657	6.1%	3,637	6.1%	0.033	0.001
Chronic kidney disease (excluding end stage renal disease)	3,262	5.4%	3,249	5.4%	0.022	0.001
Chronic obstructive pulmonary disease	3,595	6.0%	3,557	5.9%	0.063	0.003
Dementia	821	1.4%	796	1.3%	0.042	0.004
Depression	5,234	8.7%	5,259	8.8%	-0.042	-0.001
End stage renal disease (ESRD)	267	0.4%	255	0.4%	0.020	0.003
Fracture	1,583	2.6%	1,602	2.7%	-0.032	-0.002
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	69	0.1%	61	0.1%	0.013	0.004
Hyperlipidemia or lipid disorder	45,488	75.9%	45,505	75.9%	-0.028	-0.001
Hypertension	45,691	76.2%	45,838	76.4%	-0.245	-0.006
Hypoglycemia	2,138	3.6%	2,210	3.7%	-0.120	-0.006
Obesity (or weight gain)	10,581	17.6%	10,580	17.6%	0.002	0.000
Osteoporosis	2,407	4.0%	2,446	4.1%	-0.065	-0.003
Peripheral neuropathy	8,221	13.7%	8,150	13.6%	0.118	0.003
Tobacco use	3,915	6.5%	3,873	6.5%	0.070	0.003
All comorbidity covariates	55,799	93.1%	55,703	92.9%	0.160	0.006
History of use:						
Alpha-glucosidase inhibitors (B)	282	0.5%	333	0.6%	-0.085	-0.012
Biguanides (B)	43,004	71.7%	43,070	71.8%	-0.110	-0.002
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	346	0.6%	242	0.4%	0.173	0.025
Meglitinides (B)	1,067	1.8%	1,172	2.0%	-0.175	-0.013
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	-	0.0%	-	0.0%	0.000	-
Pioglitazone (B)	12,640	21.1%	12,737	21.2%	-0.162	-0.004
First-generation sulfonylureas (B)	13	0.0%	24	0.0%	-0.018	-0.010
Second-generation sulfonylureas (B)	25,182	42.0%	25,274	42.1%	-0.153	-0.003

Table 1b. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Long-acting insulins (B)	6,922	11.5%	7,014	11.7%	-0.153	-0.005
Short-acting insulins (B)	2,391	4.0%	2,465	4.1%	-0.123	-0.006
Other thiazolidinediones (B)	2,540	4.2%	2,535	4.2%	0.008	0.000
Other anti-diabetics (B)	2,958	4.9%	2,789	4.7%	0.282	0.013
All anti-diabetics (B)	51,782	86.4%	51,964	86.7%	-0.304	-0.009
Angiotensin-converting enzyme inhibitors (B)	27,277	45.5%	27,328	45.6%	-0.085	-0.002
Alpha blockers (B)	1,151	1.9%	1,188	2.0%	-0.062	-0.004
Angiotensin receptor blockers (B)	15,066	25.1%	15,017	25.0%	0.082	0.002
Beta blockers (B)	16,144	26.9%	16,162	27.0%	-0.030	-0.001
Calcium channel blockers (B)	13,494	22.5%	13,497	22.5%	-0.005	0.000
Direct vasodilators (B)	641	1.1%	641	1.1%	0.000	0.000
Loop diuretics (B)	6,027	10.1%	6,065	10.1%	-0.063	-0.002
Aldosterone receptor agonists (ARAs) (B)	1,382	2.3%	1,399	2.3%	-0.028	-0.002
Non-ARA potassium sparing diuretics (B)	1,905	3.2%	1,951	3.3%	-0.077	-0.004
Thiazide diuretics (B)	19,093	31.8%	19,152	31.9%	-0.098	-0.002
Renin inhibitors (B)	742	1.2%	593	1.0%	0.248	0.024
Central alpha-2 receptor agonists (B)	1,482	2.5%	1,392	2.3%	0.150	0.010
Reserpine and derivatives (B)	83	0.1%	91	0.2%	-0.013	-0.004
All anti-hypertensive agents (B)	45,668	76.2%	45,748	76.3%	-0.133	-0.003
Lipid lowering agents (B)	39,670	66.2%	39,770	66.3%	-0.167	-0.004
Alpha-glucosidase inhibitors (C)	159	0.3%	201	0.3%	-0.070	-0.013
Biguanides (C)	40,632	67.8%	40,555	67.6%	0.128	0.003
Other DPP-4 inhibitors (C)	94	0.2%	91	0.2%	0.005	0.001
Meglitinides (C)	673	1.1%	690	1.2%	-0.028	-0.003
Saxagliptin (C)	59,966	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	-	0.0%	59,966	100.0%	-100.000	-
Pioglitazone (C)	6,271	10.5%	6,289	10.5%	-0.030	-0.001
First-generation sulfonylureas (C)	8	0.0%	14	0.0%	-0.010	-0.007
Second-generation sulfonylureas (C)	18,658	31.1%	18,684	31.2%	-0.043	-0.001
Long-acting insulins (C)	4,525	7.5%	4,569	7.6%	-0.073	-0.003
Short-acting insulins (C)	1,055	1.8%	1,053	1.8%	0.003	0.000
Other thiazolidinediones (C)	741	1.2%	761	1.3%	-0.033	-0.003
Other anti-diabetics (C)	1,021	1.7%	938	1.6%	0.138	0.011
All anti-diabetics (C)	59,966	100.0%	59,966	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	21,191	35.3%	21,312	35.5%	-0.202	-0.004
Alpha blockers (C)	814	1.4%	866	1.4%	-0.087	-0.007
Angiotensin receptor blockers (C)	12,498	20.8%	12,423	20.7%	0.125	0.003
Beta blockers (C)	12,687	21.2%	12,706	21.2%	-0.032	-0.001
Calcium channel blockers (C)	10,899	18.2%	10,901	18.2%	-0.003	0.000

Table 1b. Baseline Characteristics of Saxagliptin vs Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Direct vasodilators (C)	413	0.7%	451	0.8%	-0.063	-0.007
Loop diuretics (C)	3,834	6.4%	3,845	6.4%	-0.018	-0.001
Aldosterone receptor agonists (ARAs) (C)	925	1.5%	931	1.6%	-0.010	-0.001
Non-ARA potassium sparing diuretics (C)	1,217	2.0%	1,252	2.1%	-0.058	-0.004
Thiazide diuretics (C)	14,551	24.3%	14,612	24.4%	-0.102	-0.002
Renin inhibitors (C)	478	0.8%	384	0.6%	0.157	0.019
Central alpha-2 receptor agonists (C)	962	1.6%	895	1.5%	0.112	0.009
Reserpine and derivatives (C)	33	0.1%	55	0.1%	-0.037	-0.014
All anti-hypertensive agents (C)	40,094	66.9%	40,268	67.2%	-0.290	-0.006
Lipid lowering agents (C)	32,679	54.5%	32,802	54.7%	-0.205	-0.004
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	1,793	3.0%	1,849	3.1%	-0.093	-0.005
Any inpatient hospital encounter (IP visit) within prior 30 day	1,077	1.8%	1,052	1.8%	0.042	0.003
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	5,760	9.6%	5,847	9.8%	-0.145	-0.005
Any emergency room encounter (ED visit) within prior 30 days	1,928	3.2%	1,945	3.2%	-0.028	-0.002
Any emergency room encounter (ED visit) 31-365 days prior to index date	10,940	18.2%	11,025	18.4%	-0.142	-0.004
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	13.6	12.9	13.7	13.0	-0.042	-0.003
Mean number of emergency room encounters (ED)	0.3	1.0	0.3	1.0	-0.004	-0.004
Mean number of inpatient hospital encounters (IP)	0.1	0.5	0.1	0.6	-0.006	-0.010
Mean number of non-acute institutional encounters (IS)	0.1	0.5	0.1	0.5	-0.005	-0.010
Mean number of other ambulatory encounters (OA)	3.0	5.5	3.0	5.9	0.015	0.003
Mean number of unique drug classes	8.0	4.7	8.0	4.8	0.000	0.000
Mean number of generics	9.2	5.5	9.2	5.6	-0.010	-0.002
Mean number of filled prescriptions	36.8	28.2	36.9	28.4	-0.083	-0.003

Table 1c. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	55,878	100.0%	127,801	100.0%	-	-
Demographics	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**		
Mean age (years)	56.7	10.8	58.5	11.4	-1.721	-0.155
Age (years)	**Number**	**Percent**	**Number**	**Percent**		
18-29	509	0.9%	1,293	1.0%	-0.101	-0.010
30-44	7,930	14.2%	15,850	12.4%	1.790	0.053
45-54	16,217	29.0%	32,694	25.6%	3.440	0.077
55-64	19,219	34.4%	41,137	32.2%	2.206	0.047
65-74	8,252	14.8%	24,854	19.4%	-4.680	-0.125
75-84	3,154	5.6%	10,138	7.9%	-2.288	-0.091
85+	597	1.1%	1,835	1.4%	-0.367	-0.033
Sex						
Female	25,605	45.8%	53,623	42.0%	3.865	0.078
Male	30,273	54.2%	74,178	58.0%	-3.865	-0.078
Year						
2009	1,005	1.8%	20,084	15.7%	-13.916	-0.508
2010	9,552	17.1%	54,107	42.3%	-25.243	-0.575
2011	15,714	28.1%	30,753	24.1%	4.059	0.093
2012	18,118	32.4%	11,774	9.2%	23.211	0.597
2013	11,487	20.9%	10,934	8.8%	12.112	0.346
2014	2	1.9%	149	1.6%	0.294	0.022
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	283	0.5%	658	0.5%	-0.008	-0.001
Acute myocardial infarction prior to 60 days before index date (narrow)	122	0.2%	267	0.2%	0.009	0.002
Acute myocardial infarction (broad)	339	0.6%	799	0.6%	-0.019	-0.002
Hospitalized heart failure prior to 60 days before index date	-	0.0%	-	0.0%	0.000	-
Other ischemic heart disease	7,518	13.5%	17,099	13.4%	0.075	0.002
Congestive heart failure	-	0.0%	-	0.0%	0.000	-
Other heart disease	9,756	17.5%	21,338	16.7%	0.763	0.020
Stroke (broad)	2,590	4.6%	5,986	4.7%	-0.049	-0.002
Stroke (narrow)	191	0.3%	457	0.4%	-0.016	-0.003
Peripheral arterial disease	2,038	3.6%	4,900	3.8%	-0.187	-0.010
All coronary revascularization procedures	1,984	3.6%	4,488	3.5%	0.039	0.002
Coronary artery bypass graft	845	1.5%	1,997	1.6%	-0.050	-0.004
Percutaneous coronary intervention	1,390	2.5%	3,012	2.4%	0.131	0.009

Table 1c. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
All carotid revascularization procedures	65	0.1%	158	0.1%	-0.007	-0.002
Carotid endarterectomy, etc.	64	0.1%	157	0.1%	-0.008	-0.002
Carotid bypass	1	0.0%	1	0.0%	0.001	0.003
All lower extremity revascularization	177	0.3%	520	0.4%	-0.090	-0.015
Lower extremity endarterectomy, etc.	96	0.2%	281	0.2%	-0.048	-0.011
Lower extremity bypass	26	0.0%	82	0.1%	-0.018	-0.007
Lower extremity amputation	75	0.1%	227	0.2%	-0.043	-0.011
All Prior Cardiovascular Disease Covariates	15,055	26.9%	33,880	26.5%	0.433	0.010
Asthma	3,447	6.2%	7,534	5.9%	0.274	0.011
Cancer (excluding non-melanoma skin cancer)	3,162	5.7%	7,346	5.7%	-0.089	-0.004
Chronic kidney disease (excluding end stage renal disease)	2,385	4.3%	8,100	6.3%	-2.070	-0.092
Chronic obstructive pulmonary disease	2,627	4.7%	6,412	5.0%	-0.316	-0.015
Dementia	577	1.0%	1,888	1.5%	-0.445	-0.040
Depression	4,853	8.7%	10,924	8.5%	0.137	0.005
End stage renal disease (ESRD)	158	0.3%	689	0.5%	-0.256	-0.040
Fracture	1,279	2.3%	3,366	2.6%	-0.345	-0.022
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	68	0.1%	305	0.2%	-0.117	-0.028
Hyperlipidemia or lipid disorder	41,886	75.0%	92,899	72.7%	2.269	0.052
Hypertension	41,853	74.9%	93,706	73.3%	1.579	0.036
Hypoglycemia	1,764	3.2%	5,517	4.3%	-1.160	-0.061
Obesity (or weight gain)	9,737	17.4%	19,757	15.5%	1.966	0.053
Osteoporosis	2,145	3.8%	4,843	3.8%	0.049	0.003
Peripheral neuropathy	7,245	13.0%	18,054	14.1%	-1.161	-0.034
Tobacco use	3,471	6.2%	7,631	6.0%	0.241	0.010
All comorbidity covariates	51,762	92.6%	115,883	90.7%	1.959	0.071
History of use:						
Alpha-glucosidase inhibitors (B)	241	0.4%	727	0.6%	-0.138	-0.020
Biguanides (B)	40,901	73.2%	90,186	70.6%	2.629	0.059
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	371	0.7%	446	0.3%	0.315	0.044
Meglitinides (B)	907	1.6%	2,106	1.6%	-0.025	-0.002
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	11,318	20.3%	20,033	15.7%	4.580	0.120
Pioglitazone (B)	-	0.0%	-	0.0%	0.000	-
First-generation sulfonylureas (B)	11	0.0%	476	0.4%	-0.353	-0.080
Second-generation sulfonylureas (B)	22,761	40.7%	62,236	48.7%	-7.964	-0.161
Long-acting insulins (B)	6,508	11.6%	16,110	12.6%	-0.959	-0.029
Short-acting insulins (B)	2,143	3.8%	6,012	4.7%	-0.869	-0.043

Table 1c. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Other thiazolidinediones (B)	2,221	4.0%	21,176	16.6%	-12.595	-0.424
Other anti-diabetics (B)	2,683	4.8%	6,709	5.2%	-0.448	-0.021
All anti-diabetics (B)	48,103	86.1%	111,363	87.1%	-1.052	-0.031
Angiotensin-converting enzyme inhibitors (B)	24,428	43.7%	60,948	47.7%	-3.973	-0.080
Alpha blockers (B)	926	1.7%	3,211	2.5%	-0.855	-0.060
Angiotensin receptor blockers (B)	13,859	24.8%	27,409	21.4%	3.356	0.080
Beta blockers (B)	13,598	24.3%	32,517	25.4%	-1.108	-0.026
Calcium channel blockers (B)	12,010	21.5%	27,281	21.3%	0.147	0.004
Direct vasodilators (B)	454	0.8%	986	0.8%	0.041	0.005
Loop diuretics (B)	3,826	6.8%	8,872	6.9%	-0.095	-0.004
Aldosterone receptor agonists (ARAs) (B)	899	1.6%	1,582	1.2%	0.371	0.031
Non-ARA potassium sparing diuretics (B)	1,703	3.0%	3,932	3.1%	-0.029	-0.002
Thiazide diuretics (B)	17,662	31.6%	39,904	31.2%	0.385	0.008
Renin inhibitors (B)	590	1.1%	963	0.8%	0.302	0.032
Central alpha-2 receptor agonists (B)	1,226	2.2%	2,688	2.1%	0.091	0.006
Reserpine and derivatives (B)	79	0.1%	97	0.1%	0.065	0.020
All anti-hypertensive agents (B)	41,599	74.4%	96,016	75.1%	-0.683	-0.016
Lipid lowering agents (B)	35,912	64.3%	84,856	66.4%	-2.128	-0.045
Alpha-glucosidase inhibitors (C)	121	0.2%	445	0.3%	-0.132	-0.025
Biguanides (C)	38,919	69.6%	79,321	62.1%	7.584	0.160
Other DPP-4 inhibitors (C)	121	0.2%	529	0.4%	-0.197	-0.035
Meglitinides (C)	542	1.0%	1,356	1.1%	-0.091	-0.009
Saxagliptin (C)	55,878	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	3,425	6.1%	15,346	12.0%	-5.878	-0.206
Pioglitazone (C)	-	0.0%	127,801	100.0%	-100.000	-
First-generation sulfonylureas (C)	4	0.0%	303	0.2%	-0.230	-0.066
Second-generation sulfonylureas (C)	16,697	29.9%	51,142	40.0%	-10.136	-0.214
Long-acting insulins (C)	4,254	7.6%	11,308	8.8%	-1.235	-0.045
Short-acting insulins (C)	984	1.8%	3,368	2.6%	-0.874	-0.060
Other thiazolidinediones (C)	761	1.4%	8,680	6.8%	-5.430	-0.277
Other anti-diabetics (C)	935	1.7%	4,363	3.4%	-1.741	-0.111
All anti-diabetics (C)	55,878	100.0%	127,801	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	18,918	33.9%	50,355	39.4%	-5.545	-0.115
Alpha blockers (C)	668	1.2%	2,430	1.9%	-0.706	-0.057
Angiotensin receptor blockers (C)	11,557	20.7%	23,147	18.1%	2.571	0.065
Beta blockers (C)	10,564	18.9%	26,468	20.7%	-1.805	-0.045
Calcium channel blockers (C)	9,767	17.5%	23,134	18.1%	-0.622	-0.016
Direct vasodilators (C)	283	0.5%	728	0.6%	-0.063	-0.009
Loop diuretics (C)	2,310	4.1%	5,552	4.3%	-0.210	-0.010
Aldosterone receptor agonists (ARAs) (C)	609	1.1%	1,130	0.9%	0.206	0.021

Table 1c. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Non-ARA potassium sparing diuretics (C)	1,098	2.0%	2,771	2.2%	-0.203	-0.014
Thiazide diuretics (C)	13,549	24.2%	31,801	24.9%	-0.636	-0.015
Renin inhibitors (C)	358	0.6%	679	0.5%	0.109	0.014
Central alpha-2 receptor agonists (C)	785	1.4%	1,859	1.5%	-0.050	-0.004
Reserpine and derivatives (C)	30	0.1%	52	0.0%	0.013	0.006
All anti-hypertensive agents (C)	36,138	64.7%	86,645	67.8%	-3.124	-0.066
Lipid lowering agents (C)	29,422	52.7%	73,213	57.3%	-4.633	-0.093
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	1,160	2.1%	3,733	2.9%	-0.845	-0.054
Any inpatient hospital encounter (IP visit) within prior 30 day	795	1.4%	3,439	2.7%	-1.268	-0.089
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	4,293	7.7%	10,525	8.2%	-0.553	-0.020
Any emergency room encounter (ED visit) within prior 30 days	1,693	3.0%	5,068	4.0%	-0.936	-0.051
Any emergency room encounter (ED visit) 31-365 days prior to index date	9,791	17.5%	22,382	17.5%	0.009	0.000
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	13.0	12.3	12.6	12.5	0.383	0.031
Mean number of emergency room encounters (ED)	0.3	1.0	0.3	1.0	-0.014	-0.014
Mean number of inpatient hospital encounters (IP)	0.1	0.4	0.1	0.5	-0.025	-0.057
Mean number of non-acute institutional encounters (IS)	0.0	0.4	0.1	0.5	-0.015	-0.033
Mean number of other ambulatory encounters (OA)	2.8	4.3	3.0	5.2	-0.194	-0.041
Mean number of unique drug classes	7.8	4.6	7.5	4.5	0.255	0.056
Mean number of generics	8.9	5.3	8.7	5.3	0.181	0.034
Mean number of filled prescriptions	35.5	27.3	34.8	27.3	0.685	0.025

Table 1d. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	41,199	74.2%	41,199	35.3%	-	-
Demographics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean age (years)	57.4	11.0	57.5	11.4	-0.066	-0.006
Age (years)	Number	Percent	Number	Percent		
18-29	337	0.8%	525	1.3%	-0.456	-0.045
30-44	5,590	13.6%	5,658	13.7%	-0.165	-0.005
45-54	11,539	28.0%	11,183	27.1%	0.864	0.019
55-64	13,827	33.6%	13,258	32.2%	1.381	0.029
65-74	6,707	16.3%	7,307	17.7%	-1.456	-0.039
75-84	2,673	6.5%	2,785	6.8%	-0.272	-0.011
85+	526	1.3%	483	1.2%	0.104	0.009
Sex						
Female	18,100	43.9%	18,328	44.5%	-0.553	-0.011
Male	23,099	56.1%	22,871	55.5%	0.553	0.011
Year						
2009	1,001	2.4%	1,221	3.0%	-0.534	-0.033
2010	9,430	22.9%	9,175	22.3%	0.619	0.015
2011	14,156	34.4%	13,772	33.4%	0.932	0.020
2012	8,830	21.4%	9,208	22.4%	-0.917	-0.022
2013	7,782	19.1%	7,823	19.2%	-0.100	-0.003
2014	-	0.0%	-	0.0%	0.000	-
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	209	0.5%	214	0.5%	-0.012	-0.002
Acute myocardial infarction prior to 60 days before index date (narrow)	90	0.2%	88	0.2%	0.005	0.001
Acute myocardial infarction (broad)	257	0.6%	249	0.6%	0.019	0.002
Hospitalized heart failure prior to 60 days before index date	-	0.0%	-	0.0%	0.000	-
Other ischemic heart disease	5,712	13.9%	5,715	13.9%	-0.007	0.000
Congestive heart failure	-	0.0%	-	0.0%	0.000	-
Other heart disease	7,224	17.5%	7,159	17.4%	0.158	0.004
Stroke (broad)	2,005	4.9%	1,940	4.7%	0.158	0.007
Stroke (narrow)	141	0.3%	137	0.3%	0.010	0.002
Peripheral arterial disease	1,577	3.8%	1,533	3.7%	0.107	0.006
All coronary revascularization procedures	1,526	3.7%	1,472	3.6%	0.131	0.007
Coronary artery bypass graft	663	1.6%	639	1.6%	0.058	0.005

Table 1d. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Percutaneous coronary intervention	1,058	2.6%	1,010	2.5%	0.117	0.007
All carotid revascularization procedures	48	0.1%	42	0.1%	0.015	0.004
Carotid endarterectomy, etc.	48	0.1%	42	0.1%	0.015	0.004
Carotid bypass	-	0.0%	-	0.0%	0.000	-
All lower extremity revascularization	143	0.3%	138	0.3%	0.012	0.002
Lower extremity endarterectomy, etc.	76	0.2%	81	0.2%	-0.012	-0.003
Lower extremity bypass	22	0.1%	24	0.1%	-0.005	-0.002
Lower extremity amputation	62	0.2%	53	0.1%	0.022	0.006
All Prior Cardiovascular Disease Covariates	11,287	27.4%	11,135	27.0%	0.369	0.008
Asthma	2,473	6.0%	2,475	6.0%	-0.005	0.000
Cancer (excluding non-melanoma skin cancer)	2,338	5.7%	2,341	5.7%	-0.007	0.000
Chronic kidney disease (excluding end stage renal disease)	1,992	4.8%	2,032	4.9%	-0.097	-0.005
Chronic obstructive pulmonary disease	2,009	4.9%	1,957	4.8%	0.126	0.006
Dementia	493	1.2%	492	1.2%	0.002	0.000
Depression	3,598	8.7%	3,618	8.8%	-0.049	-0.002
End stage renal disease (ESRD)	147	0.4%	136	0.3%	0.027	0.005
Fracture	1,001	2.4%	975	2.4%	0.063	0.004
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	58	0.1%	65	0.2%	-0.017	-0.004
Hyperlipidemia or lipid disorder	30,656	74.4%	30,687	74.5%	-0.075	-0.002
Hypertension	30,691	74.5%	30,843	74.9%	-0.369	-0.008
Hypoglycemia	1,389	3.4%	1,375	3.3%	0.034	0.002
Obesity (or weight gain)	6,841	16.6%	6,868	16.7%	-0.066	-0.002
Osteoporosis	1,555	3.8%	1,558	3.8%	-0.007	0.000
Peripheral neuropathy	5,540	13.4%	5,561	13.5%	-0.051	-0.001
Tobacco use	2,530	6.1%	2,513	6.1%	0.041	0.002
All comorbidity covariates	38,036	92.3%	37,917	92.0%	0.289	0.011
History of use:						
Alpha-glucosidase inhibitors (B)	206	0.5%	189	0.5%	0.041	0.006
Biguanides (B)	29,503	71.6%	29,687	72.1%	-0.447	-0.010
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	273	0.7%	357	0.9%	-0.204	-0.023
Meglitinides (B)	790	1.9%	430	1.0%	0.874	0.072
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	6,093	14.8%	6,277	15.2%	-0.447	-0.013
Pioglitazone (B)	-	0.0%	-	0.0%	0.000	-
First-generation sulfonylureas (B)	10	0.0%	15	0.0%	-0.012	-0.007
Second-generation sulfonylureas (B)	17,697	43.0%	17,940	43.5%	-0.590	-0.012

Table 1d. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Long-acting insulins (B)	4,938	12.0%	4,945	12.0%	-0.017	-0.001
Short-acting insulins (B)	1,739	4.2%	1,740	4.2%	-0.002	0.000
Other thiazolidinediones (B)	2,187	5.3%	2,332	5.7%	-0.352	-0.015
Other anti-diabetics (B)	2,200	5.3%	2,348	5.7%	-0.359	-0.016
All anti-diabetics (B)	35,291	85.7%	34,882	84.7%	0.993	0.028
Angiotensin-converting enzyme inhibitors (B)	18,519	45.0%	18,574	45.1%	-0.133	-0.003
Alpha blockers (B)	746	1.8%	820	2.0%	-0.180	-0.013
Angiotensin receptor blockers (B)	9,474	23.0%	9,633	23.4%	-0.386	-0.009
Beta blockers (B)	10,151	24.6%	10,247	24.9%	-0.233	-0.005
Calcium channel blockers (B)	8,827	21.4%	8,967	21.8%	-0.340	-0.008
Direct vasodilators (B)	329	0.8%	324	0.8%	0.012	0.001
Loop diuretics (B)	2,931	7.1%	2,780	6.7%	0.367	0.014
Aldosterone receptor agonists (ARAs) (B)	635	1.5%	633	1.5%	0.005	0.000
Non-ARA potassium sparing diuretics (B)	1,255	3.0%	1,266	3.1%	-0.027	-0.002
Thiazide diuretics (B)	12,786	31.0%	12,848	31.2%	-0.150	-0.003
Renin inhibitors (B)	438	1.1%	363	0.9%	0.182	0.019
Central alpha-2 receptor agonists (B)	903	2.2%	878	2.1%	0.061	0.004
Reserpine and derivatives (B)	54	0.1%	58	0.1%	-0.010	-0.003
All anti-hypertensive agents (B)	30,550	74.2%	30,613	74.3%	-0.153	-0.003
Lipid lowering agents (B)	26,301	63.8%	26,435	64.2%	-0.325	-0.007
Alpha-glucosidase inhibitors (C)	104	0.3%	110	0.3%	-0.015	-0.003
Biguanides (C)	27,021	65.6%	26,719	64.9%	0.733	0.015
Other DPP-4 inhibitors (C)	89	0.2%	408	1.0%	-0.774	-0.100
Meglitinides (C)	479	1.2%	266	0.6%	0.517	0.055
Saxagliptin (C)	41,199	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	2,775	6.7%	2,666	6.5%	0.265	0.011
Pioglitazone (C)	-	0.0%	41,199	100.0%	-100.000	-
First-generation sulfonylureas (C)	4	0.0%	11	0.0%	-0.017	-0.013
Second-generation sulfonylureas (C)	13,520	32.8%	13,711	33.3%	-0.464	-0.010
Long-acting insulins (C)	3,322	8.1%	3,285	8.0%	0.090	0.003
Short-acting insulins (C)	843	2.0%	840	2.0%	0.007	0.001
Other thiazolidinediones (C)	756	1.8%	849	2.1%	-0.226	-0.016
Other anti-diabetics (C)	755	1.8%	1,609	3.9%	-2.073	-0.124
All anti-diabetics (C)	41,199	100.0%	41,199	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	14,685	35.6%	14,696	35.7%	-0.027	-0.001
Alpha blockers (C)	544	1.3%	596	1.4%	-0.126	-0.011
Angiotensin receptor blockers (C)	7,952	19.3%	8,069	19.6%	-0.284	-0.007
Beta blockers (C)	8,018	19.5%	8,082	19.6%	-0.155	-0.004
Calcium channel blockers (C)	7,281	17.7%	7,405	18.0%	-0.301	-0.008

Table 1d. Baseline Characteristics of Saxagliptin vs Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Direct vasodilators (C)	210	0.5%	233	0.6%	-0.056	-0.008
Loop diuretics (C)	1,782	4.3%	1,680	4.1%	0.248	0.012
Aldosterone receptor agonists (ARAs) (C)	439	1.1%	444	1.1%	-0.012	-0.001
Non-ARA potassium sparing diuretics (C)	824	2.0%	868	2.1%	-0.107	-0.008
Thiazide diuretics (C)	9,931	24.1%	10,035	24.4%	-0.252	-0.006
Renin inhibitors (C)	293	0.7%	237	0.6%	0.136	0.017
Central alpha-2 receptor agonists (C)	604	1.5%	567	1.4%	0.090	0.008
Reserpine and derivatives (C)	24	0.1%	29	0.1%	-0.012	-0.005
All anti-hypertensive agents (C)	26,854	65.2%	27,065	65.7%	-0.512	-0.011
Lipid lowering agents (C)	22,007	53.4%	22,217	53.9%	-0.510	-0.010
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	1,002	2.4%	1,006	2.4%	-0.010	-0.001
Any inpatient hospital encounter (IP visit) within prior 30 day	717	1.7%	727	1.8%	-0.024	-0.002
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	3,275	7.9%	3,228	7.8%	0.114	0.004
Any emergency room encounter (ED visit) within prior 30 days	1,371	3.3%	1,301	3.2%	0.170	0.010
Any emergency room encounter (ED visit) 31-365 days prior to index date	7,177	17.4%	7,135	17.3%	0.102	0.003
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	12.9	12.0	12.9	12.6	0.000	0.000
Mean number of emergency room encounters (ED)	0.3	1.0	0.3	1.0	-0.007	-0.007
Mean number of inpatient hospital encounters (IP)	0.1	0.4	0.1	0.4	-0.003	-0.007
Mean number of non-acute institutional encounters (IS)	0.0	0.4	0.0	0.5	-0.002	-0.004
Mean number of other ambulatory encounters (OA)	2.8	4.3	2.7	5.2	0.040	0.008
Mean number of unique drug classes	7.7	4.5	7.7	4.7	-0.009	-0.002
Mean number of generics	8.8	5.3	8.8	5.5	-0.049	-0.009
Mean number of filled prescriptions	35.1	27.2	34.7	27.8	0.433	0.016

Table 1e. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	66,311	100.0%	273,506	100.0%	-	-
Demographics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean age (years)	57.6	10.9	59.3	12.7	-1.656	-0.140
Age (years)	Number	Percent	Number	Percent		
18-29	510	0.8%	5,635	2.1%	-1.291	-0.109
30-44	8,566	12.9%	34,269	12.5%	0.388	0.012
45-54	18,345	27.7%	62,268	22.8%	4.898	0.113
55-64	23,042	34.7%	79,785	29.2%	5.577	0.120
65-74	10,558	15.9%	55,631	20.3%	-4.418	-0.115
75-84	4,411	6.7%	28,164	10.3%	-3.645	-0.131
85+	879	1.3%	7,754	2.8%	-1.509	-0.106
Sex						
Female	28,877	43.5%	123,392	45.1%	-1.567	-0.032
Male	37,434	56.5%	150,114	54.9%	1.567	0.032
Year						
2009	1,250	1.9%	26,878	9.8%	-7.942	-0.343
2010	12,013	18.1%	63,331	23.2%	-5.039	-0.125
2011	19,958	30.1%	64,641	23.6%	6.463	0.146
2012	21,168	31.9%	64,774	23.7%	8.239	0.185
2013	11,921	18.2%	51,987	19.7%	-1.516	-0.039
2014	1	0.8%	1,895	4.5%	-3.697	-0.230
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	472	0.7%	4,314	1.6%	-0.865	-0.081
Acute myocardial infarction prior to 60 days before index date (narrow)	192	0.3%	1,620	0.6%	-0.303	-0.046
Acute myocardial infarction (broad)	542	0.8%	6,306	2.3%	-1.488	-0.120
Hospitalized heart failure prior to 60 days before index date	190	0.3%	2,947	1.1%	-0.791	-0.096
Other ischemic heart disease	9,975	15.0%	62,065	22.7%	-7.650	-0.196
Congestive heart failure	2,832	4.3%	31,579	11.5%	-7.275	-0.272
Other heart disease	12,986	19.6%	78,911	28.9%	-9.268	-0.218
Stroke (broad)	3,339	5.0%	23,681	8.7%	-3.623	-0.144
Stroke (narrow)	206	0.3%	3,671	1.3%	-1.032	-0.114
Peripheral arterial disease	2,548	3.8%	18,006	6.6%	-2.741	-0.124
All coronary revascularization procedures	2,774	4.2%	22,804	8.3%	-4.154	-0.172
Coronary artery bypass graft	1,264	1.9%	11,882	4.3%	-2.438	-0.140
Percutaneous coronary intervention	1,912	2.9%	15,366	5.6%	-2.735	-0.136

Table 1e. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
All carotid revascularization procedures	82	0.1%	669	0.2%	-0.121	-0.028
Carotid endarterectomy, etc.	82	0.1%	668	0.2%	-0.121	-0.028
Carotid bypass	-	0.0%	1	0.0%	0.000	-
All lower extremity revascularization	202	0.3%	3,753	1.4%	-1.068	-0.117
Lower extremity endarterectomy, etc.	126	0.2%	1,633	0.6%	-0.407	-0.065
Lower extremity bypass	44	0.1%	643	0.2%	-0.169	-0.044
Lower extremity amputation	66	0.1%	2,260	0.8%	-0.727	-0.107
All Prior Cardiovascular Disease Covariates	19,449	29.3%	112,938	41.3%	-11.963	-0.252
Asthma	3,972	6.0%	23,389	8.6%	-2.562	-0.099
Cancer (excluding non-melanoma skin cancer)	3,964	6.0%	24,354	8.9%	-2.926	-0.112
Chronic kidney disease (excluding end stage renal disease)	3,266	4.9%	34,508	12.6%	-7.692	-0.274
Chronic obstructive pulmonary disease	3,565	5.4%	29,279	10.7%	-5.329	-0.197
Dementia	789	1.2%	10,094	3.7%	-2.501	-0.163
Depression	5,357	8.1%	35,636	13.0%	-4.951	-0.162
End stage renal disease (ESRD)	212	0.3%	6,741	2.5%	-2.145	-0.184
Fracture	1,607	2.4%	11,342	4.1%	-1.723	-0.097
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	84	0.1%	830	0.3%	-0.177	-0.038
Hyperlipidemia or lipid disorder	50,435	76.1%	189,725	69.4%	6.691	0.151
Hypertension	50,241	75.8%	207,719	75.9%	-0.181	-0.004
Hypoglycemia	1,968	3.0%	25,287	9.2%	-6.278	-0.264
Obesity (or weight gain)	11,127	16.8%	60,599	22.2%	-5.376	-0.136
Osteoporosis	2,618	3.9%	10,999	4.0%	-0.073	-0.004
Peripheral neuropathy	8,143	12.3%	57,884	21.2%	-8.884	-0.240
Tobacco use	4,092	6.2%	31,181	11.4%	-5.230	-0.186
All comorbidity covariates	61,617	92.9%	250,298	91.5%	1.407	0.053
History of use:						
Alpha-glucosidase inhibitors (B)	325	0.5%	2,368	0.9%	-0.376	-0.046
Biguanides (B)	49,328	74.4%	176,246	64.4%	9.949	0.217
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	422	0.6%	1,966	0.7%	-0.082	-0.010
Meglitinides (B)	1,215	1.8%	6,122	2.2%	-0.406	-0.029
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	13,051	19.7%	48,885	17.9%	1.808	0.046
Pioglitazone (B)	13,999	21.1%	51,116	18.7%	2.422	0.061
First-generation sulfonylureas (B)	14	0.0%	1,291	0.5%	-0.451	-0.091
Second-generation sulfonylureas (B)	28,880	43.6%	156,764	57.3%	-13.764	-0.278
Long-acting insulins (B)	-	0.0%	1	0.0%	0.000	-
Short-acting insulins (B)	350	0.5%	17,368	6.4%	-5.822	-0.324

Table 1e. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Other thiazolidinediones (B)	2,662	4.0%	6,347	2.3%	1.694	0.097
Other anti-diabetics (B)	2,897	4.4%	24,166	8.8%	-4.467	-0.181
All anti-diabetics (B)	58,159	87.7%	220,986	80.8%	6.909	0.191
Angiotensin-converting enzyme inhibitors (B)	29,631	44.7%	131,241	48.0%	-3.300	-0.066
Alpha blockers (B)	1,233	1.9%	9,079	3.3%	-1.460	-0.092
Angiotensin receptor blockers (B)	16,899	25.5%	55,059	20.1%	5.354	0.128
Beta blockers (B)	17,146	25.9%	93,467	34.2%	-8.317	-0.182
Calcium channel blockers (B)	14,544	21.9%	66,904	24.5%	-2.529	-0.060
Direct vasodilators (B)	611	0.9%	6,528	2.4%	-1.465	-0.115
Loop diuretics (B)	5,759	8.7%	46,572	17.0%	-8.343	-0.251
Aldosterone receptor agonists (ARAs) (B)	1,351	2.0%	9,718	3.6%	-1.516	-0.092
Non-ARA potassium sparing diuretics (B)	2,058	3.1%	7,847	2.9%	0.235	0.014
Thiazide diuretics (B)	21,064	31.8%	81,643	29.9%	1.915	0.041
Renin inhibitors (B)	764	1.2%	1,896	0.7%	0.459	0.048
Central alpha-2 receptor agonists (B)	1,465	2.2%	9,739	3.6%	-1.352	-0.081
Reserpine and derivatives (B)	99	0.1%	271	0.1%	0.050	0.014
All anti-hypertensive agents (B)	50,313	75.9%	209,814	76.7%	-0.838	-0.020
Lipid lowering agents (B)	44,355	66.9%	173,581	63.5%	3.424	0.072
Alpha-glucosidase inhibitors (C)	182	0.3%	1,246	0.5%	-0.181	-0.030
Biguanides (C)	45,776	69.0%	129,060	47.2%	21.845	0.454
Other DPP-4 inhibitors (C)	126	0.2%	1,359	0.5%	-0.307	-0.052
Meglitinides (C)	745	1.1%	3,608	1.3%	-0.196	-0.018
Saxagliptin (C)	66,311	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	4,073	6.1%	30,595	11.2%	-5.044	-0.180
Pioglitazone (C)	6,996	10.6%	26,602	9.7%	0.824	0.027
First-generation sulfonylureas (C)	9	0.0%	801	0.3%	-0.279	-0.071
Second-generation sulfonylureas (C)	21,651	32.7%	115,141	42.1%	-9.447	-0.196
Long-acting insulins (C)	-	0.0%	273,506	100.0%	-100.000	-
Short-acting insulins (C)	145	0.2%	46,933	17.2%	-16.941	-0.631
Other thiazolidinediones (C)	779	1.2%	2,029	0.7%	0.433	0.044
Other anti-diabetics (C)	1,100	1.7%	11,542	4.2%	-2.561	-0.152
All anti-diabetics (C)	66,311	100.0%	273,506	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	23,032	34.7%	102,611	37.5%	-2.784	-0.058
Alpha blockers (C)	887	1.3%	6,528	2.4%	-1.049	-0.078
Angiotensin receptor blockers (C)	14,067	21.2%	42,484	15.5%	5.681	0.147
Beta blockers (C)	13,438	20.3%	77,481	28.3%	-8.064	-0.189
Calcium channel blockers (C)	11,838	17.9%	54,111	19.8%	-1.932	-0.049
Direct vasodilators (C)	388	0.6%	5,154	1.9%	-1.299	-0.118
Loop diuretics (C)	3,619	5.5%	33,011	12.1%	-6.612	-0.235
Aldosterone receptor agonists (ARAs) (C)	913	1.4%	6,651	2.4%	-1.055	-0.077

Table 1e. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Non-ARA potassium sparing diuretics (C)	1,336	2.0%	4,771	1.7%	0.270	0.020
Thiazide diuretics (C)	16,125	24.3%	58,279	21.3%	3.009	0.072
Renin inhibitors (C)	488	0.7%	1,017	0.4%	0.364	0.049
Central alpha-2 receptor agonists (C)	955	1.4%	6,795	2.5%	-1.044	-0.075
Reserpine and derivatives (C)	43	0.1%	99	0.0%	0.029	0.013
All anti-hypertensive agents (C)	44,027	66.4%	188,326	68.9%	-2.462	-0.053
Lipid lowering agents (C)	36,396	54.9%	139,919	51.2%	3.729	0.075
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	1,580	2.4%	25,543	9.3%	-6.956	-0.299
Any inpatient hospital encounter (IP visit) within prior 30 day	920	1.4%	47,359	17.3%	-15.928	-0.569
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	5,489	8.3%	50,955	18.6%	-10.353	-0.307
Any emergency room encounter (ED visit) within prior 30 days	1,888	2.8%	34,523	12.6%	-9.775	-0.372
Any emergency room encounter (ED visit) 31-365 days prior to index date	11,272	17.0%	74,428	27.2%	-10.214	-0.248
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	13.2	12.4	16.3	17.7	-3.140	-0.205
Mean number of emergency room encounters (ED)	0.3	0.9	0.7	1.7	-0.399	-0.290
Mean number of inpatient hospital encounters (IP)	0.1	0.4	0.5	1.0	-0.369	-0.475
Mean number of non-acute institutional encounters (IS)	0.0	0.4	0.2	1.3	-0.183	-0.189
Mean number of other ambulatory encounters (OA)	2.9	4.8	5.3	9.2	-2.415	-0.329
Mean number of unique drug classes	7.8	4.5	8.8	5.5	-1.059	-0.211
Mean number of generics	9.0	5.3	10.3	6.4	-1.312	-0.224
Mean number of filled prescriptions	36.8	27.5	38.5	31.5	-1.777	-0.060

Table 1f. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	53,834	81.7%	53,834	23.7%	-	-
Demographics	Mean	Standard Deviation	Mean	Standard Deviation		
Mean age (years)	57.9	11.2	58.0	11.6	-0.122	-0.011
Age (years)	Number	Percent	Number	Percent		
18-29	452	0.8%	727	1.4%	-0.511	-0.049
30-44	7,101	13.2%	7,022	13.0%	0.147	0.004
45-54	14,513	27.0%	14,011	26.0%	0.932	0.021
55-64	17,914	33.3%	17,352	32.2%	1.044	0.022
65-74	9,058	16.8%	9,859	18.3%	-1.488	-0.039
75-84	3,978	7.4%	3,998	7.4%	-0.037	-0.001
85+	818	1.5%	865	1.6%	-0.087	-0.007
Sex						
Female	23,798	44.2%	23,868	44.3%	-0.130	-0.003
Male	30,036	55.8%	29,966	55.7%	0.130	0.003
Year						
2009	1,245	2.3%	1,427	2.7%	-0.338	-0.022
2010	11,150	20.7%	11,003	20.4%	0.273	0.007
2011	15,569	28.9%	15,633	29.0%	-0.119	-0.003
2012	15,703	29.2%	15,847	29.4%	-0.267	-0.006
2013	10,167	19.1%	9,924	18.6%	0.456	0.012
2014	-	0.0%	-	0.0%	0.000	-
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	440	0.8%	426	0.8%	0.026	0.003
Acute myocardial infarction prior to 60 days before index date (narrow)	180	0.3%	160	0.3%	0.037	0.007
Acute myocardial infarction (broad)	504	0.9%	507	0.9%	-0.006	-0.001
Hospitalized heart failure prior to 60 days before index date	187	0.3%	204	0.4%	-0.032	-0.005
Other ischemic heart disease	8,776	16.3%	8,869	16.5%	-0.173	-0.005
Congestive heart failure	2,639	4.9%	2,744	5.1%	-0.195	-0.009
Other heart disease	11,059	20.5%	11,169	20.7%	-0.204	-0.005
Stroke (broad)	2,911	5.4%	2,978	5.5%	-0.124	-0.005
Stroke (narrow)	194	0.4%	204	0.4%	-0.019	-0.003
Peripheral arterial disease	2,270	4.2%	2,304	4.3%	-0.063	-0.003
All coronary revascularization procedures	2,497	4.6%	2,496	4.6%	0.002	0.000
Coronary artery bypass graft	1,144	2.1%	1,193	2.2%	-0.091	-0.006
Percutaneous coronary intervention	1,722	3.2%	1,646	3.1%	0.141	0.008

Table 1f. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
All carotid revascularization procedures	74	0.1%	66	0.1%	0.015	0.004
Carotid endarterectomy, etc.	74	0.1%	66	0.1%	0.015	0.004
Carotid bypass	-	0.0%	-	0.0%	0.000	-
All lower extremity revascularization	192	0.4%	204	0.4%	-0.022	-0.004
Lower extremity endarterectomy, etc.	117	0.2%	121	0.2%	-0.007	-0.002
Lower extremity bypass	43	0.1%	38	0.1%	0.009	0.003
Lower extremity amputation	65	0.1%	83	0.2%	-0.033	-0.009
All Prior Cardiovascular Disease Covariates	16,629	30.9%	16,891	31.4%	-0.487	-0.011
Asthma	3,315	6.2%	3,388	6.3%	-0.136	-0.006
Cancer (excluding non-melanoma skin cancer)	3,477	6.5%	3,503	6.5%	-0.048	-0.002
Chronic kidney disease (excluding end stage renal disease)	3,053	5.7%	3,048	5.7%	0.009	0.000
Chronic obstructive pulmonary disease	3,190	5.9%	3,220	6.0%	-0.056	-0.002
Dementia	755	1.4%	757	1.4%	-0.004	0.000
Depression	4,754	8.8%	4,739	8.8%	0.028	0.001
End stage renal disease (ESRD)	210	0.4%	248	0.5%	-0.071	-0.011
Fracture	1,418	2.6%	1,457	2.7%	-0.072	-0.004
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	82	0.2%	67	0.1%	0.028	0.007
Hyperlipidemia or lipid disorder	39,970	74.2%	40,229	74.7%	-0.481	-0.011
Hypertension	40,623	75.5%	40,779	75.7%	-0.290	-0.007
Hypoglycemia	1,810	3.4%	1,845	3.4%	-0.065	-0.004
Obesity (or weight gain)	9,299	17.3%	9,381	17.4%	-0.152	-0.004
Osteoporosis	2,069	3.8%	2,130	4.0%	-0.113	-0.006
Peripheral neuropathy	7,345	13.6%	7,413	13.8%	-0.126	-0.004
Tobacco use	3,574	6.6%	3,513	6.5%	0.113	0.005
All comorbidity covariates	49,814	92.5%	49,383	91.7%	0.801	0.030
History of use:						
Alpha-glucosidase inhibitors (B)	320	0.6%	189	0.4%	0.243	0.035
Biguanides (B)	39,630	73.6%	39,838	74.0%	-0.386	-0.009
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	414	0.8%	371	0.7%	0.080	0.009
Meglitinides (B)	1,200	2.2%	674	1.3%	0.977	0.075
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	9,791	18.2%	9,914	18.4%	-0.228	-0.006
Pioglitazone (B)	11,423	21.2%	11,430	21.2%	-0.013	0.000
First-generation sulfonylureas (B)	14	0.0%	17	0.0%	-0.006	-0.003
Second-generation sulfonylureas (B)	26,892	50.0%	26,488	49.2%	0.750	0.015
Long-acting insulins (B)	-	0.0%	-	0.0%	0.000	-
Short-acting insulins (B)	350	0.7%	407	0.8%	-0.106	-0.013

Table 1f. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Other thiazolidinediones (B)	1,955	3.6%	1,981	3.7%	-0.048	-0.003
Other anti-diabetics (B)	2,864	5.3%	3,743	7.0%	-1.633	-0.068
All anti-diabetics (B)	47,654	88.5%	44,796	83.2%	5.309	0.153
Angiotensin-converting enzyme inhibitors (B)	24,833	46.1%	24,776	46.0%	0.106	0.002
Alpha blockers (B)	1,077	2.0%	1,152	2.1%	-0.139	-0.010
Angiotensin receptor blockers (B)	12,506	23.2%	12,889	23.9%	-0.711	-0.017
Beta blockers (B)	14,612	27.1%	14,712	27.3%	-0.186	-0.004
Calcium channel blockers (B)	11,885	22.1%	11,998	22.3%	-0.210	-0.005
Direct vasodilators (B)	562	1.0%	634	1.2%	-0.134	-0.013
Loop diuretics (B)	5,234	9.7%	5,758	10.7%	-0.973	-0.032
Aldosterone receptor agonists (ARAs) (B)	1,217	2.3%	1,219	2.3%	-0.004	0.000
Non-ARA potassium sparing diuretics (B)	1,769	3.3%	1,464	2.7%	0.567	0.033
Thiazide diuretics (B)	16,668	31.0%	16,880	31.4%	-0.394	-0.009
Renin inhibitors (B)	627	1.2%	420	0.8%	0.385	0.039
Central alpha-2 receptor agonists (B)	1,301	2.4%	1,320	2.5%	-0.035	-0.002
Reserpine and derivatives (B)	76	0.1%	59	0.1%	0.032	0.009
All anti-hypertensive agents (B)	40,803	75.8%	40,600	75.4%	0.377	0.009
Lipid lowering agents (B)	35,112	65.2%	35,351	65.7%	-0.444	-0.009
Alpha-glucosidase inhibitors (C)	178	0.3%	107	0.2%	0.132	0.026
Biguanides (C)	33,976	63.1%	34,380	63.9%	-0.750	-0.016
Other DPP-4 inhibitors (C)	121	0.2%	272	0.5%	-0.280	-0.047
Meglitinides (C)	736	1.4%	429	0.8%	0.570	0.055
Saxagliptin (C)	53,834	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	3,927	7.3%	3,830	7.1%	0.180	0.007
Pioglitazone (C)	5,907	11.0%	5,876	10.9%	0.058	0.002
First-generation sulfonylureas (C)	9	0.0%	9	0.0%	0.000	0.000
Second-generation sulfonylureas (C)	20,117	37.4%	19,953	37.1%	0.305	0.006
Long-acting insulins (C)	-	0.0%	53,834	100.0%	-100.000	-
Short-acting insulins (C)	145	0.3%	285	0.5%	-0.260	-0.041
Other thiazolidinediones (C)	602	1.1%	616	1.1%	-0.026	-0.002
Other anti-diabetics (C)	1,086	2.0%	2,036	3.8%	-1.765	-0.105
All anti-diabetics (C)	53,834	100.0%	53,834	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	19,367	36.0%	19,288	35.8%	0.147	0.003
Alpha blockers (C)	776	1.4%	848	1.6%	-0.134	-0.011
Angiotensin receptor blockers (C)	10,200	18.9%	10,564	19.6%	-0.676	-0.017
Beta blockers (C)	11,486	21.3%	11,580	21.5%	-0.175	-0.004
Calcium channel blockers (C)	9,586	17.8%	9,649	17.9%	-0.117	-0.003
Direct vasodilators (C)	358	0.7%	446	0.8%	-0.163	-0.019
Loop diuretics (C)	3,320	6.2%	3,817	7.1%	-0.923	-0.037
Aldosterone receptor agonists (ARAs) (C)	812	1.5%	853	1.6%	-0.076	-0.006

Table 1f. Baseline Characteristics of Saxagliptin vs Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Non-ARA potassium sparing diuretics (C)	1,143	2.1%	939	1.7%	0.379	0.028
Thiazide diuretics (C)	12,604	23.4%	12,807	23.8%	-0.377	-0.009
Renin inhibitors (C)	405	0.8%	230	0.4%	0.325	0.042
Central alpha-2 receptor agonists (C)	852	1.6%	871	1.6%	-0.035	-0.003
Reserpine and derivatives (C)	33	0.1%	26	0.0%	0.013	0.006
All anti-hypertensive agents (C)	35,638	66.2%	35,688	66.3%	-0.093	-0.002
Lipid lowering agents (C)	28,529	53.0%	28,748	53.4%	-0.407	-0.008
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	1,563	2.9%	1,630	3.0%	-0.124	-0.007
Any inpatient hospital encounter (IP visit) within prior 30 day	914	1.7%	1,133	2.1%	-0.407	-0.030
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	5,029	9.3%	5,107	9.5%	-0.145	-0.005
Any emergency room encounter (ED visit) within prior 30 days	1,852	3.4%	1,956	3.6%	-0.193	-0.010
Any emergency room encounter (ED visit) 31-365 days prior to index date	10,064	18.7%	10,040	18.6%	0.045	0.001
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	13.6	12.8	13.8	13.7	-0.144	-0.011
Mean number of emergency room encounters (ED)	0.3	1.0	0.4	1.0	-0.023	-0.023
Mean number of inpatient hospital encounters (IP)	0.1	0.5	0.2	0.5	-0.014	-0.028
Mean number of non-acute institutional encounters (IS)	0.1	0.4	0.1	0.6	-0.008	-0.014
Mean number of other ambulatory encounters (OA)	3.0	5.1	3.1	6.0	-0.120	-0.022
Mean number of unique drug classes	7.9	4.6	7.9	4.9	-0.009	-0.002
Mean number of generics	9.2	5.4	9.3	5.7	-0.083	-0.015
Mean number of filled prescriptions	37.4	28.0	37.0	29.9	0.402	0.014

Table 1g. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	41,689	100.0%	392,552	100.0%	-	-
Demographics	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**		
Mean age (years)	56.3	10.8	59.5	12.1	-3.168	-0.275
Age (years)	**Number**	**Percent**	**Number**	**Percent**		
18-29	391	0.9%	3,977	1.0%	-0.075	-0.008
30-44	6,164	14.8%	48,827	12.4%	2.347	0.068
45-54	12,297	29.5%	94,552	24.1%	5.410	0.122
55-64	14,722	35.3%	116,281	29.6%	5.692	0.122
65-74	5,611	13.5%	78,798	20.1%	-6.614	-0.178
75-84	2,103	5.0%	39,406	10.0%	-4.994	-0.190
85+	401	1.0%	10,711	2.7%	-1.767	-0.132
Sex						
Female	18,608	44.6%	175,755	44.8%	-0.137	-0.003
Male	23,081	55.4%	216,797	55.2%	0.137	0.003
Year						
2009	724	1.7%	40,835	10.4%	-8.666	-0.369
2010	6,893	16.5%	98,863	25.2%	-8.650	-0.214
2011	12,630	30.3%	94,700	24.1%	6.172	0.139
2012	13,769	33.0%	87,221	22.2%	10.809	0.244
2013	7,671	18.6%	68,028	17.9%	0.702	0.018
2014	2	3.0%	2,905	4.8%	-1.720	-0.089
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	287	0.7%	4,077	1.0%	-0.350	-0.038
Acute myocardial infarction prior to 60 days before index date (narrow)	125	0.3%	1,617	0.4%	-0.112	-0.019
Acute myocardial infarction (broad)	331	0.8%	5,238	1.3%	-0.540	-0.053
Hospitalized heart failure prior to 60 days before index date	98	0.2%	2,182	0.6%	-0.321	-0.051
Other ischemic heart disease	5,935	14.2%	68,032	17.3%	-3.094	-0.085
Congestive heart failure	1,680	4.0%	27,725	7.1%	-3.033	-0.133
Other heart disease	7,978	19.1%	86,673	22.1%	-2.942	-0.073
Stroke (broad)	1,960	4.7%	23,613	6.0%	-1.314	-0.058
Stroke (narrow)	149	0.4%	2,806	0.7%	-0.357	-0.049
Peripheral arterial disease	1,509	3.6%	18,164	4.6%	-1.007	-0.051
All coronary revascularization procedures	1,655	4.0%	22,235	5.7%	-1.694	-0.079
Coronary artery bypass graft	763	1.8%	10,906	2.8%	-0.948	-0.063

Table 1g. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Percutaneous coronary intervention	1,166	2.8%	14,892	3.8%	-0.997	-0.056
All carotid revascularization procedures	43	0.1%	626	0.2%	-0.056	-0.016
Carotid endarterectomy, etc.	42	0.1%	624	0.2%	-0.058	-0.016
Carotid bypass	1	0.0%	2	0.0%	0.002	0.005
All lower extremity revascularization	134	0.3%	2,315	0.6%	-0.268	-0.040
Lower extremity endarterectomy, etc.	71	0.2%	1,187	0.3%	-0.132	-0.027
Lower extremity bypass	24	0.1%	454	0.1%	-0.058	-0.020
Lower extremity amputation	58	0.1%	1,133	0.3%	-0.149	-0.032
All Prior Cardiovascular Disease Covariates	11,851	28.4%	128,334	32.7%	-4.265	-0.093
Asthma	2,737	6.6%	28,965	7.4%	-0.813	-0.032
Cancer (excluding non-melanoma skin cancer)	2,383	5.7%	27,579	7.0%	-1.309	-0.054
Chronic kidney disease (excluding end stage renal disease)	1,688	4.0%	32,818	8.4%	-4.311	-0.179
Chronic obstructive pulmonary disease	2,233	5.4%	31,920	8.1%	-2.775	-0.111
Dementia	490	1.2%	9,621	2.5%	-1.276	-0.096
Depression	3,689	8.8%	40,933	10.4%	-1.579	-0.054
End stage renal disease (ESRD)	160	0.4%	3,699	0.9%	-0.559	-0.069
Fracture	1,035	2.5%	11,930	3.0%	-0.556	-0.034
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	70	0.2%	873	0.2%	-0.054	-0.012
Hyperlipidemia or lipid disorder	31,233	74.9%	265,138	67.5%	7.377	0.164
Hypertension	30,733	73.7%	284,197	72.4%	1.322	0.030
Hypoglycemia	1,232	3.0%	20,569	5.2%	-2.285	-0.115
Obesity (or weight gain)	7,347	17.6%	72,999	18.6%	-0.973	-0.025
Osteoporosis	1,688	4.0%	15,579	4.0%	0.080	0.004
Peripheral neuropathy	4,995	12.0%	55,545	14.1%	-2.168	-0.064
Tobacco use	2,624	6.3%	34,475	8.8%	-2.488	-0.094
All comorbidity covariates	38,524	92.4%	350,501	89.3%	3.120	0.108
History of use:						
Alpha-glucosidase inhibitors (B)	117	0.3%	1,027	0.3%	0.019	0.004
Biguanides (B)	28,701	68.8%	250,249	63.7%	5.096	0.108
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	242	0.6%	1,581	0.4%	0.178	0.025
Meglitinides (B)	883	2.1%	4,793	1.2%	0.897	0.070
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	7,628	18.3%	42,793	10.9%	7.396	0.211
Pioglitazone (B)	7,675	18.4%	44,118	11.2%	7.171	0.203
First-generation sulfonylureas (B)	12	0.0%	3,338	0.9%	-0.822	-0.124
Second-generation sulfonylureas (B)	-	0.0%	1	0.0%	0.000	-

Table 1g. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Long-acting insulins (B)	5,159	12.4%	40,045	10.2%	2.174	0.069
Short-acting insulins (B)	2,040	4.9%	14,913	3.8%	1.094	0.054
Other thiazolidinediones (B)	1,462	3.5%	7,284	1.9%	1.651	0.102
Other anti-diabetics (B)	1,940	4.7%	12,631	3.2%	1.436	0.074
All anti-diabetics (B)	33,821	81.1%	291,133	74.2%	6.963	0.168
Angiotensin-converting enzyme inhibitors (B)	16,654	39.9%	171,058	43.6%	-3.628	-0.074
Alpha blockers (B)	599	1.4%	11,198	2.9%	-1.416	-0.098
Angiotensin receptor blockers (B)	10,741	25.8%	73,621	18.8%	7.010	0.169
Beta blockers (B)	9,988	24.0%	113,892	29.0%	-5.055	-0.115
Calcium channel blockers (B)	8,421	20.2%	84,352	21.5%	-1.289	-0.032
Direct vasodilators (B)	321	0.8%	5,463	1.4%	-0.622	-0.060
Loop diuretics (B)	3,414	8.2%	43,373	11.0%	-2.860	-0.097
Aldosterone receptor agonists (ARAs) (B)	891	2.1%	9,142	2.3%	-0.192	-0.013
Non-ARA potassium sparing diuretics (B)	1,225	2.9%	12,479	3.2%	-0.241	-0.014
Thiazide diuretics (B)	12,598	30.2%	116,097	29.6%	0.644	0.014
Renin inhibitors (B)	512	1.2%	2,064	0.5%	0.702	0.075
Central alpha-2 receptor agonists (B)	839	2.0%	10,005	2.5%	-0.536	-0.036
Reserpine and derivatives (B)	51	0.1%	381	0.1%	0.025	0.008
All anti-hypertensive agents (B)	30,132	72.3%	283,651	72.3%	0.020	0.000
Lipid lowering agents (B)	26,575	63.7%	234,043	59.6%	4.125	0.085
Alpha-glucosidase inhibitors (C)	58	0.1%	666	0.2%	-0.031	-0.008
Biguanides (C)	28,533	68.4%	230,467	58.7%	9.733	0.203
Other DPP-4 inhibitors (C)	66	0.2%	1,264	0.3%	-0.164	-0.033
Meglitinides (C)	561	1.3%	2,383	0.6%	0.739	0.075
Saxagliptin (C)	41,689	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	2,328	5.6%	30,730	7.8%	-2.244	-0.090
Pioglitazone (C)	3,844	9.2%	27,693	7.1%	2.166	0.079
First-generation sulfonylureas (C)	8	0.0%	2,105	0.5%	-0.517	-0.098
Second-generation sulfonylureas (C)	-	0.0%	392,552	100.0%	-100.000	-
Long-acting insulins (C)	3,446	8.3%	27,095	6.9%	1.364	0.052
Short-acting insulins (C)	949	2.3%	7,871	2.0%	0.271	0.019
Other thiazolidinediones (C)	430	1.0%	3,176	0.8%	0.222	0.023
Other anti-diabetics (C)	700	1.7%	6,960	1.8%	-0.094	-0.007
All anti-diabetics (C)	41,689	100.0%	392,552	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	12,793	30.7%	149,646	38.1%	-7.435	-0.157
Alpha blockers (C)	426	1.0%	8,573	2.2%	-1.162	-0.093
Angiotensin receptor blockers (C)	9,037	21.7%	60,618	15.4%	6.235	0.161
Beta blockers (C)	7,742	18.6%	97,217	24.8%	-6.195	-0.151
Calcium channel blockers (C)	6,812	16.3%	71,364	18.2%	-1.839	-0.049

Table 1g. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Direct vasodilators (C)	208	0.5%	4,247	1.1%	-0.583	-0.066
Loop diuretics (C)	2,105	5.0%	30,573	7.8%	-2.739	-0.112
Aldosterone receptor agonists (ARAs) (C)	585	1.4%	6,553	1.7%	-0.266	-0.022
Non-ARA potassium sparing diuretics (C)	783	1.9%	8,599	2.2%	-0.312	-0.022
Thiazide diuretics (C)	9,626	23.1%	93,051	23.7%	-0.614	-0.015
Renin inhibitors (C)	321	0.8%	1,201	0.3%	0.464	0.063
Central alpha-2 receptor agonists (C)	510	1.2%	6,998	1.8%	-0.559	-0.046
Reserpine and derivatives (C)	19	0.0%	181	0.0%	-0.001	0.000
All anti-hypertensive agents (C)	26,226	62.9%	267,268	68.1%	-5.176	-0.109
Lipid lowering agents (C)	21,916	52.6%	206,052	52.5%	0.080	0.002
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	903	2.2%	20,911	5.3%	-3.161	-0.167
Any inpatient hospital encounter (IP visit) within prior 30 day	676	1.6%	27,951	7.1%	-5.499	-0.271
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	3,597	8.6%	47,352	12.1%	-3.434	-0.113
Any emergency room encounter (ED visit) within prior 30 days	1,283	3.1%	29,692	7.6%	-4.486	-0.201
Any emergency room encounter (ED visit) 31-365 days prior to index date	7,202	17.3%	84,024	21.4%	-4.129	-0.105
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	13.3	12.7	13.1	14.2	0.157	0.012
Mean number of emergency room encounters (ED)	0.3	1.1	0.5	1.3	-0.150	-0.127
Mean number of inpatient hospital encounters (IP)	0.1	0.5	0.3	0.7	-0.124	-0.204
Mean number of non-acute institutional encounters (IS)	0.0	0.4	0.1	0.9	-0.073	-0.106
Mean number of other ambulatory encounters (OA)	2.9	5.6	4.0	7.1	-1.081	-0.168
Mean number of unique drug classes	7.7	4.8	7.6	5.0	0.104	0.021
Mean number of generics	8.6	5.5	8.4	5.7	0.224	0.040
Mean number of filled prescriptions	33.7	27.4	30.3	26.9	3.336	0.123

Table 1h. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Patients	40,831	98.2%	40,831	12.4%	-	-
Demographics	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**		
Mean age (years)	56.3	10.9	56.3	11.4	0.002	0.000
Age (years)	**Number**	**Percent**	**Number**	**Percent**		
18-29	385	0.9%	501	1.2%	-0.284	-0.027
30-44	6,027	14.8%	6,296	15.4%	-0.659	-0.018
45-54	12,030	29.5%	11,945	29.3%	0.208	0.005
55-64	14,346	35.1%	13,297	32.6%	2.569	0.054
65-74	5,551	13.6%	6,139	15.0%	-1.440	-0.041
75-84	2,094	5.1%	2,201	5.4%	-0.262	-0.012
85+	398	1.0%	452	1.1%	-0.132	-0.013
Sex						
Female	18,221	44.6%	18,284	44.8%	-0.154	-0.003
Male	22,610	55.4%	22,547	55.2%	0.154	0.003
Year						
2009	724	1.8%	818	2.0%	-0.230	-0.017
2010	6,867	16.8%	7,014	17.2%	-0.360	-0.010
2011	12,519	30.7%	12,473	30.5%	0.113	0.002
2012	13,194	32.3%	13,087	32.1%	0.262	0.006
2013	7,527	18.6%	7,439	18.4%	0.218	0.006
2014	-	0.0%	-	0.0%	0.000	-
Recorded history of:						
Prior combined comorbidity raw score	-	-	-	-	-	-
Acute myocardial infarction prior to 60 days before index date (broad)	281	0.7%	303	0.7%	-0.054	-0.006
Acute myocardial infarction prior to 60 days before index date (narrow)	124	0.3%	114	0.3%	0.024	0.005
Acute myocardial infarction (broad)	323	0.8%	356	0.9%	-0.081	-0.009
Hospitalized heart failure prior to 60 days before index date	98	0.2%	95	0.2%	0.007	0.002
Other ischemic heart disease	5,836	14.3%	5,904	14.5%	-0.167	-0.005
Congestive heart failure	1,658	4.1%	1,743	4.3%	-0.208	-0.010
Other heart disease	7,831	19.2%	7,982	19.5%	-0.370	-0.009
Stroke (broad)	1,934	4.7%	1,957	4.8%	-0.056	-0.003
Stroke (narrow)	148	0.4%	157	0.4%	-0.022	-0.004
Peripheral arterial disease	1,488	3.6%	1,460	3.6%	0.069	0.004
All coronary revascularization procedures	1,623	4.0%	1,684	4.1%	-0.149	-0.008
Coronary artery bypass graft	749	1.8%	765	1.9%	-0.039	-0.003

Table 1h. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Percutaneous coronary intervention	1,140	2.8%	1,148	2.8%	-0.020	-0.001
All carotid revascularization procedures	43	0.1%	42	0.1%	0.002	0.001
Carotid endarterectomy, etc.	42	0.1%	41	0.1%	0.002	0.001
Carotid bypass	1	0.0%	1	0.0%	0.000	0.000
All lower extremity revascularization	133	0.3%	134	0.3%	-0.002	0.000
Lower extremity endarterectomy, etc.	71	0.2%	76	0.2%	-0.012	-0.003
Lower extremity bypass	24	0.1%	23	0.1%	0.002	0.001
Lower extremity amputation	57	0.1%	59	0.1%	-0.005	-0.001
All Prior Cardiovascular Disease Covariates	11,631	28.5%	11,641	28.5%	-0.024	-0.001
Asthma	2,687	6.6%	2,708	6.6%	-0.051	-0.002
Cancer (excluding non-melanoma skin cancer)	2,353	5.8%	2,355	5.8%	-0.005	0.000
Chronic kidney disease (excluding end stage renal disease)	1,670	4.1%	1,664	4.1%	0.015	0.001
Chronic obstructive pulmonary disease	2,215	5.4%	2,258	5.5%	-0.105	-0.005
Dementia	487	1.2%	481	1.2%	0.015	0.001
Depression	3,619	8.9%	3,669	9.0%	-0.122	-0.004
End stage renal disease (ESRD)	160	0.4%	166	0.4%	-0.015	-0.002
Fracture	1,021	2.5%	1,097	2.7%	-0.186	-0.012
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome (AIDS)	68	0.2%	82	0.2%	-0.034	-0.008
Hyperlipidemia or lipid disorder	30,503	74.7%	30,755	75.3%	-0.617	-0.014
Hypertension	30,064	73.6%	30,154	73.9%	-0.220	-0.005
Hypoglycemia	1,208	3.0%	1,203	2.9%	0.012	0.001
Obesity (or weight gain)	7,186	17.6%	7,199	17.6%	-0.032	-0.001
Osteoporosis	1,647	4.0%	1,689	4.1%	-0.103	-0.005
Peripheral neuropathy	4,882	12.0%	4,955	12.1%	-0.179	-0.005
Tobacco use	2,584	6.3%	2,605	6.4%	-0.051	-0.002
All comorbidity covariates	37,708	92.4%	37,504	91.9%	0.500	0.019
History of use:						
Alpha-glucosidase inhibitors (B)	114	0.3%	128	0.3%	-0.034	-0.006
Biguanides (B)	27,976	68.5%	28,137	68.9%	-0.394	-0.009
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	235	0.6%	392	1.0%	-0.385	-0.044
Meglitinides (B)	873	2.1%	565	1.4%	0.754	0.057
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	6,890	16.9%	6,984	17.1%	-0.230	-0.006
Pioglitazone (B)	7,423	18.2%	7,499	18.4%	-0.186	-0.005
First-generation sulfonylureas (B)	12	0.0%	17	0.0%	-0.012	-0.006
Second-generation sulfonylureas (B)	-	0.0%	-	0.0%	0.000	-

Table 1h. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Long-acting insulins (B)	4,958	12.1%	4,993	12.2%	-0.086	-0.003
Short-acting insulins (B)	1,962	4.8%	2,006	4.9%	-0.108	-0.005
Other thiazolidinediones (B)	1,418	3.5%	1,428	3.5%	-0.024	-0.001
Other anti-diabetics (B)	1,901	4.7%	2,227	5.5%	-0.798	-0.036
All anti-diabetics (B)	32,969	80.7%	32,942	80.7%	0.066	0.002
Angiotensin-converting enzyme inhibitors (B)	16,359	40.1%	16,475	40.3%	-0.284	-0.006
Alpha blockers (B)	595	1.5%	671	1.6%	-0.186	-0.015
Angiotensin receptor blockers (B)	10,396	25.5%	10,551	25.8%	-0.380	-0.009
Beta blockers (B)	9,805	24.0%	9,954	24.4%	-0.365	-0.009
Calcium channel blockers (B)	8,258	20.2%	8,432	20.7%	-0.426	-0.011
Direct vasodilators (B)	313	0.8%	378	0.9%	-0.159	-0.017
Loop diuretics (B)	3,357	8.2%	3,449	8.4%	-0.225	-0.008
Aldosterone receptor agonists (ARAs) (B)	875	2.1%	795	1.9%	0.196	0.014
Non-ARA potassium sparing diuretics (B)	1,209	3.0%	1,152	2.8%	0.140	0.008
Thiazide diuretics (B)	12,319	30.2%	12,428	30.4%	-0.267	-0.006
Renin inhibitors (B)	504	1.2%	321	0.8%	0.448	0.045
Central alpha-2 receptor agonists (B)	826	2.0%	908	2.2%	-0.201	-0.014
Reserpine and derivatives (B)	51	0.1%	65	0.2%	-0.034	-0.009
All anti-hypertensive agents (B)	29,461	72.2%	29,483	72.2%	-0.054	-0.001
Lipid lowering agents (B)	25,881	63.4%	26,012	63.7%	-0.321	-0.007
Alpha-glucosidase inhibitors (C)	57	0.1%	73	0.2%	-0.039	-0.010
Biguanides (C)	27,810	68.1%	27,667	67.8%	0.350	0.008
Other DPP-4 inhibitors (C)	62	0.2%	320	0.8%	-0.632	-0.093
Meglitinides (C)	554	1.4%	285	0.7%	0.659	0.065
Saxagliptin (C)	40,831	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	2,320	5.7%	2,221	5.4%	0.242	0.011
Pioglitazone (C)	3,743	9.2%	3,804	9.3%	-0.149	-0.005
First-generation sulfonylureas (C)	8	0.0%	10	0.0%	-0.005	-0.003
Second-generation sulfonylureas (C)	-	0.0%	40,831	100.0%	-100.000	-
Long-acting insulins (C)	3,297	8.1%	3,398	8.3%	-0.247	-0.009
Short-acting insulins (C)	911	2.2%	944	2.3%	-0.081	-0.005
Other thiazolidinediones (C)	425	1.0%	422	1.0%	0.007	0.001
Other anti-diabetics (C)	680	1.7%	1,298	3.2%	-1.514	-0.099
All anti-diabetics (C)	40,831	100.0%	40,831	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	12,620	30.9%	12,572	30.8%	0.118	0.003
Alpha blockers (C)	424	1.0%	502	1.2%	-0.191	-0.018
Angiotensin receptor blockers (C)	8,754	21.4%	8,885	21.8%	-0.321	-0.008
Beta blockers (C)	7,622	18.7%	7,657	18.8%	-0.086	-0.002
Calcium channel blockers (C)	6,683	16.4%	6,770	16.6%	-0.213	-0.006

Table 1h. Baseline Characteristics of Saxagliptin vs Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01

	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas			
Characteristic	Number	Percent	Number	Percent	Absolute Difference	Standardized Difference
Direct vasodilators (C)	206	0.5%	291	0.7%	-0.208	-0.027
Loop diuretics (C)	2,074	5.1%	2,218	5.4%	-0.353	-0.016
Aldosterone receptor agonists (ARAs) (C)	576	1.4%	554	1.4%	0.054	0.005
Non-ARA potassium sparing diuretics (C)	775	1.9%	742	1.8%	0.081	0.006
Thiazide diuretics (C)	9,438	23.1%	9,477	23.2%	-0.096	-0.002
Renin inhibitors (C)	321	0.8%	180	0.4%	0.345	0.044
Central alpha-2 receptor agonists (C)	505	1.2%	562	1.4%	-0.140	-0.012
Reserpine and derivatives (C)	19	0.0%	28	0.1%	-0.022	-0.009
All anti-hypertensive agents (C)	25,710	63.0%	26,154	64.1%	-1.087	-0.023
Lipid lowering agents (C)	21,409	52.4%	21,475	52.6%	-0.162	-0.003
Health Service Utilization Intensity:						
Non-acute institutional stay (IS visit) during prior year	902	2.2%	917	2.2%	-0.037	-0.002
Any inpatient hospital encounter (IP visit) within prior 30 day	672	1.6%	744	1.8%	-0.176	-0.014
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	3,546	8.7%	3,626	8.9%	-0.196	-0.007
Any emergency room encounter (ED visit) within prior 30 days	1,279	3.1%	1,334	3.3%	-0.135	-0.008
Any emergency room encounter (ED visit) 31-365 days prior to index date	7,097	17.4%	7,065	17.3%	0.078	0.002
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	13.3	12.8	13.5	14.9	-0.229	-0.017
Mean number of emergency room encounters (ED)	0.3	1.1	0.3	1.1	-0.013	-0.012
Mean number of inpatient hospital encounters (IP)	0.1	0.5	0.1	0.5	-0.008	-0.016
Mean number of non-acute institutional encounters (IS)	0.0	0.4	0.0	0.5	-0.007	-0.015
Mean number of other ambulatory encounters (OA)	2.9	5.6	2.8	5.5	0.077	0.014
Mean number of unique drug classes	7.7	4.8	7.7	4.9	-0.045	-0.009
Mean number of generics	8.6	5.5	8.7	5.8	-0.101	-0.018
Mean number of filled prescriptions	33.5	27.4	33.0	28.1	0.483	0.017

Table 2. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	60,160	28,697.66	174.23	0.48	144	5.02	2.39	-2.96	-1.65	0.65 (0.54, 0.78)	<0.001
Sitagliptin	197,490	100,079.97	185.09	0.51	798	7.97	4.04				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	59,966	12,876.31	78.43	0.21	71	5.51	1.18	-0.93	-0.20	0.86 (0.62, 1.17)	0.334
Sitagliptin	59,966	12,876.31	78.43	0.21	83	6.45	1.38				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	59,966	28,596.37	174.18	0.48	144	5.04	2.40	-0.54	-0.25	0.91 (0.73, 1.15)	0.434
Sitagliptin	59,966	28,505.52	173.63	0.48	159	5.58	2.65				

Table 3. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Prior Cardiovascular Disease Status

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
No prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	41,539	19,469.01	171.19	0.47	20	1.03	0.48	-0.50	-0.28	0.70 (0.43, 1.13)	0.142
Sitagliptin	128,095	63,601.97	181.35	0.50	97	1.53	0.76				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	41,398	8,727.58	77.00	0.21	10	1.15	0.24	-0.11	-0.02	0.91 (0.39, 2.14)	0.827
Sitagliptin	41,398	8,727.58	77.00	0.21	11	1.26	0.27				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	41,398	19,392.90	171.10	0.47	20	1.03	0.48	-0.43	-0.19	0.71 (0.40, 1.27)	0.25
Sitagliptin	41,398	19,199.04	169.39	0.46	28	1.46	0.68				
Presence of prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	18,621	9,228.66	181.02	0.50	124	13.44	6.66	-5.78	-3.44	0.71 (0.59, 0.86)	<0.001
Sitagliptin	69,395	36,478.00	192.00	0.53	701	19.22	10.10				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	18,554	4,169.74	82.08	0.22	60	14.39	3.23	-1.92	-0.43	0.88 (0.62, 1.25)	0.48
Sitagliptin	18,554	4,169.74	82.08	0.22	68	16.31	3.66				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	18,554	9,199.56	181.10	0.50	124	13.48	6.68	-0.89	-0.54	0.95 (0.74, 1.21)	0.652
Sitagliptin	18,554	9,327.29	183.62	0.50	134	14.37	7.22				

Table 4. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Sex

Medical Product	Sex	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Male	33,772	16,733.79	180.98	0.50	75	4.48	2.22	-3.27	-1.86	0.59 (0.46, 0.75)	<0.001
Sitagliptin	Male	108,371	57,051.79	192.29	0.53	442	7.75	4.08				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	33,658	7,568.81	82.14	0.22	40	5.28	1.19	0.13	0.03	1.03 (0.66, 1.59)	0.91
Sitagliptin	Male	33,658	7,568.81	82.14	0.22	39	5.15	1.16				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	33,658	16,678.49	180.99	0.50	75	4.50	2.23	-0.60	-0.30	0.90 (0.66, 1.22)	0.488
Sitagliptin	Male	33,658	16,676.09	180.97	0.50	85	5.10	2.53				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Female	26,388	11,963.88	165.60	0.45	69	5.77	2.61	-2.51	-1.38	0.73 (0.57, 0.95)	0.019
Sitagliptin	Female	89,119	43,028.18	176.35	0.48	356	8.27	3.99				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	26,294	5,341.60	74.20	0.20	31	5.80	1.18	1.12	0.23	1.24 (0.73, 2.10)	0.424
Sitagliptin	Female	26,294	5,341.60	74.20	0.20	25	4.68	0.95				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	26,294	11,913.98	165.50	0.45	69	5.79	2.62	0.66	0.30	1.16 (0.82, 1.63)	0.408
Sitagliptin	Female	26,294	11,892.05	165.19	0.45	61	5.13	2.32				

Table 5. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Age Group

Medical Product	Age Group (years)	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	18-64	45,265	20,659.75	166.71	0.46	37	1.79	0.82	-1.20	-0.61	0.60 (0.42, 0.85)	0.004
Sitagliptin	18-64	133,600	63,898.72	174.69	0.48	191	2.99	1.43				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	45,113	9,206.10	74.54	0.20	17	1.85	0.38	-0.76	-0.16	0.71 (0.38, 1.32)	0.277
Sitagliptin	18-64	45,113	9,206.10	74.54	0.20	24	2.61	0.53				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	45,113	20,581.54	166.64	0.46	37	1.80	0.82	-0.57	-0.24	0.76 (0.50, 1.17)	0.22
Sitagliptin	18-64	45,113	20,256.81	164.01	0.45	48	2.37	1.06				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	65+	14,895	8,037.91	197.10	0.54	107	13.31	7.18	-3.46	-2.32	0.78 (0.64, 0.96)	0.02
Sitagliptin	65+	63,890	36,181.25	206.84	0.57	607	16.78	9.50				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	14,846	3,717.75	91.47	0.25	54	14.52	3.64	0.81	0.20	1.06 (0.72, 1.55)	0.77
Sitagliptin	65+	14,846	3,717.75	91.47	0.25	51	13.72	3.44				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	14,846	8,011.19	197.10	0.54	107	13.36	7.21	0.72	0.20	1.06 (0.81, 1.39)	0.685
Sitagliptin	65+	14,846	8,230.86	202.50	0.55	104	12.64	7.01				

Table 6. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	55,878	24,827.22	162.28	0.44	58	2.34	1.04	-1.93	-1.19	0.63 (0.47, 0.84)	0.002
Pioglitazone	127,801	66,832.28	191.00	0.52	285	4.26	2.23				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	41,199	8,240.52	73.06	0.20	22	2.67	0.53	-0.24	-0.05	0.92 (0.51, 1.63)	0.768
Pioglitazone	41,199	8,240.52	73.06	0.20	24	2.91	0.58				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	41,199	19,042.24	168.82	0.46	48	2.52	1.17	-1.02	-0.29	0.72 (0.49, 1.05)	0.084
Pioglitazone	41,199	16,932.99	150.12	0.41	60	3.54	1.46				

Table 7. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Prior Cardiovascular Disease Status

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
No prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	40,823	17,825.23	159.49	0.44	19	1.07	0.47	-0.97	-0.60	0.65 (0.39, 1.08)	0.095
Pioglitazone	93,921	49,127.69	191.05	0.52	100	2.04	1.06				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	29,783	5,863.04	71.90	0.20	10	1.71	0.34	0.00	0.00	1.00 (0.42, 2.40)	1
Pioglitazone	29,783	5,863.04	71.90	0.20	10	1.71	0.34				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	29,783	13,528.79	165.91	0.45	18	1.33	0.60	-0.24	-0.03	0.87 (0.46, 1.66)	0.676
Pioglitazone	29,783	12,129.82	148.76	0.41	19	1.57	0.64				
Presence of prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	15,055	7,001.98	169.88	0.47	39	5.57	2.59	-4.88	-2.87	0.59 (0.42, 0.84)	0.003
Pioglitazone	33,880	17,704.58	190.87	0.52	185	10.45	5.46				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	11,397	2,378.78	76.23	0.21	19	7.99	1.67	-0.84	-0.18	0.90 (0.49, 1.68)	0.752
Pioglitazone	11,397	2,378.78	76.23	0.21	21	8.83	1.84				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	11,397	5,502.92	176.36	0.48	33	6.00	2.90	-2.94	-0.97	0.68 (0.43, 1.07)	0.096
Pioglitazone	11,397	4,921.44	157.72	0.43	44	8.94	3.86				

Table 8. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Sex

Medical Product	Sex	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Male	30,273	13,795.70	166.45	0.46	29	2.10	0.96	-1.23	-0.90	0.77 (0.51, 1.16)	0.213
Pioglitazone	Male	74,178	41,415.82	203.93	0.56	138	3.33	1.86				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	22,920	4,760.01	75.85	0.21	13	2.73	0.57	0.84	0.17	1.44 (0.62, 3.38)	0.396
Pioglitazone	Male	22,920	4,760.01	75.85	0.21	9	1.89	0.39				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	22,920	10,773.73	171.69	0.47	23	2.13	1.00	-0.18	0.00	0.94 (0.52, 1.67)	0.823
Pioglitazone	Male	22,920	9,948.50	158.54	0.43	23	2.31	1.00				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Female	25,605	11,031.52	157.36	0.43	29	2.63	1.13	-3.15	-1.61	0.49 (0.33, 0.74)	<0.001
Pioglitazone	Female	53,623	25,416.45	173.12	0.47	147	5.78	2.74				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	18,167	3,433.82	69.04	0.19	12	3.49	0.66	-0.58	-0.11	0.86 (0.40, 1.85)	0.695
Pioglitazone	Female	18,167	3,433.82	69.04	0.19	14	4.08	0.77				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	18,167	8,165.68	164.17	0.45	26	3.18	1.43	-1.35	-0.28	0.71 (0.42, 1.20)	0.197
Pioglitazone	Female	18,167	6,837.66	137.47	0.38	31	4.53	1.71				

Table 9. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Age Group

Medical Product	Age Group (years)	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	18-64	43,875	18,742.71	156.03	0.43	20	1.07	0.46	-0.77	-0.46	0.62 (0.38, 1.03)	0.064
Pioglitazone	18-64	90,974	45,229.02	181.59	0.50	83	1.84	0.91				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	30,823	5,924.52	70.21	0.19	8	1.35	0.26	-1.01	-0.19	0.57 (0.24, 1.36)	0.207
Pioglitazone	18-64	30,823	5,924.52	70.21	0.19	14	2.36	0.45				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	30,823	13,709.02	162.45	0.44	16	1.17	0.52	-0.89	-0.29	0.56 (0.30, 1.04)	0.068
Pioglitazone	18-64	30,823	12,165.86	144.16	0.39	25	2.05	0.81				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	65+	12,003	6,084.51	185.15	0.51	38	6.25	3.17	-3.11	-2.32	0.69 (0.48, 0.98)	0.038
Pioglitazone	65+	36,827	21,603.25	214.26	0.59	202	9.35	5.49				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	10,248	2,357.27	84.02	0.23	16	6.79	1.56	-3.39	-0.78	0.67 (0.35, 1.25)	0.209
Pioglitazone	65+	10,248	2,357.27	84.02	0.23	24	10.18	2.34				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	10,248	5,265.77	187.68	0.51	33	6.27	3.22	-2.08	-0.68	0.76 (0.48, 1.21)	0.254
Pioglitazone	65+	10,248	4,791.30	170.77	0.47	40	8.35	3.90				

Table 10. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	66,311	30,600.91	168.55	0.46	122	3.99	1.84	-15.00	-3.55	0.27 (0.22, 0.33)	<0.001
Long Acting Insulin	273,506	77,623.17	103.66	0.28	1,474	18.99	5.39				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	53,834	8,678.52	58.88	0.16	42	4.84	0.78	-3.00	-0.48	0.62 (0.42, 0.91)	0.014
Long Acting Insulin	53,834	8,678.52	58.88	0.16	68	7.84	1.26				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	53,834	24,310.61	164.94	0.45	116	4.77	2.15	-3.09	-0.11	0.64 (0.49, 0.83)	<0.001
Long Acting Insulin	53,834	15,517.59	105.28	0.29	122	7.86	2.27				

Table 11. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Prior Cardiovascular Disease Status

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
No prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	46,862	21,343.43	166.35	0.46	21	0.98	0.45	-2.53	-0.54	0.32 (0.20, 0.52)	<0.001
Long-Acting Insulins	160,568	45,220.05	102.86	0.28	159	3.52	0.99				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	36,981	5,809.02	57.37	0.16	6	1.03	0.16	-1.21	-0.19	0.46 (0.18, 1.21)	0.117
Long-Acting Insulins	36,981	5,809.02	57.37	0.16	13	2.24	0.35				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	36,981	16,414.69	162.12	0.44	19	1.16	0.51	-1.09	-0.11	0.56 (0.30, 1.05)	0.069
Long-Acting Insulins	36,981	10,221.06	100.95	0.28	23	2.25	0.62				
Presence of prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	19,449	9,257.48	173.85	0.48	101	10.91	5.19	-29.67	-6.45	0.34 (0.28, 0.42)	<0.001
Long-Acting Insulins	112,938	32,403.13	104.79	0.29	1,315	40.58	11.64				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	16,786	2,883.06	62.73	0.17	40	13.87	2.38	-4.86	-0.83	0.74 (0.49, 1.11)	0.15
Long-Acting Insulins	16,786	2,883.06	62.73	0.17	54	18.73	3.22				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	16,786	7,839.41	170.58	0.47	97	12.37	5.78	-4.97	0.30	0.76 (0.57, 1.01)	0.057
Long-Acting Insulins	16,786	5,303.73	115.40	0.32	92	17.35	5.48				

Table 12. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Sex

Medical Product	Sex	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Male	37,434	17,782.74	173.51	0.48	66	3.71	1.76	-15.96	-3.88	0.24 (0.18, 0.31)	<0.001
Long-Acting Insulins	Male	150,114	43,061.45	104.78	0.29	847	19.67	5.64				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	29,834	4,915.45	60.18	0.16	27	5.49	0.91	-3.66	-0.60	0.60 (0.37, 0.97)	0.036
Long-Acting Insulins	Male	29,834	4,915.45	60.18	0.16	45	9.15	1.51				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	29,834	13,895.81	170.12	0.47	61	4.39	2.04	-3.89	-0.40	0.57 (0.41, 0.81)	0.002
Long-Acting Insulins	Male	29,834	8,815.07	107.92	0.30	73	8.28	2.45				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Female	28,877	12,818.17	162.13	0.44	56	4.37	1.94	-13.77	-3.14	0.31 (0.24, 0.42)	<0.001
Long-Acting Insulins	Female	123,392	34,561.72	102.31	0.28	627	18.14	5.08				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	23,971	3,776.69	57.55	0.16	24	6.35	1.00	0.79	0.13	1.14 (0.64, 2.05)	0.655
Long-Acting Insulins	Female	23,971	3,776.69	57.55	0.16	21	5.56	0.88				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	23,971	10,417.30	158.73	0.43	54	5.18	2.25	-2.30	0.17	0.73 (0.50, 1.09)	0.121
Long-Acting Insulins	Female	23,971	6,682.47	101.82	0.28	50	7.48	2.09				

Table 13. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Age Group

Medical Product	Age Group (years)	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	18-64	50,463	22,327.41	161.61	0.44	34	1.52	0.67	-7.47	-1.70	0.20 (0.14, 0.29)	<0.001
Long-Acting Insulins	18-64	181,957	48,029.98	96.41	0.26	432	8.99	2.37				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	39,444	5,961.23	55.20	0.15	11	1.85	0.28	-3.02	-0.46	0.38 (0.19, 0.76)	0.006
Long-Acting Insulins	18-64	39,444	5,961.23	55.20	0.15	29	4.86	0.74				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	39,444	16,987.90	157.31	0.43	31	1.82	0.79	-2.24	-0.28	0.49 (0.31, 0.79)	0.003
Long-Acting Insulins	18-64	39,444	10,325.86	95.62	0.26	42	4.07	1.06				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	65+	15,848	8,273.49	190.68	0.52	88	10.64	5.55	-24.57	-5.83	0.35 (0.28, 0.43)	<0.001
Long-Acting Insulins	65+	91,549	29,593.19	118.07	0.32	1,042	35.21	11.38				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	14,267	2,750.29	70.41	0.19	35	12.73	2.45	-5.09	-0.98	0.71 (0.46, 1.10)	0.128
Long-Acting Insulins	65+	14,267	2,750.29	70.41	0.19	49	17.82	3.43				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	14,267	7,311.39	187.18	0.51	83	11.35	5.82	-4.00	0.21	0.79 (0.58, 1.07)	0.128
Long-Acting Insulins	65+	14,267	5,211.70	133.42	0.37	80	15.35	5.61				

Table 14. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	41,689	18,659.82	163.48	0.45	65	3.48	1.56	-5.87	-3.67	0.43 (0.34, 0.56)	<0.001
Second-Generation Sulfonylureas	392,552	219,235.35	203.99	0.56	2,051	9.36	5.22				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	40,831	8,332.38	74.54	0.20	29	3.48	0.71	-1.56	-0.32	0.69 (0.43, 1.11)	0.125
Second-Generation Sulfonylureas	40,831	8,332.38	74.54	0.20	42	5.04	1.03				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	40,831	18,272.76	163.46	0.45	64	3.50	1.57	-1.83	-0.88	0.68 (0.50, 0.93)	0.016
Second-Generation Sulfonylureas	40,831	18,764.19	167.85	0.46	100	5.33	2.45				

Table 15. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Prior Cardiovascular Disease Status

Medical Product	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
No prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	29,838	13,173.03	161.25	0.44	8	0.61	0.27	-1.49	-0.89	0.38 (0.19, 0.77)	0.007
Second-Generation Sulfonylureas	264,218	145,558.69	201.22	0.55	305	2.10	1.15				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	29,213	5,815.69	72.71	0.20	4	0.69	0.14	-0.69	-0.14	0.50 (0.15, 1.66)	0.258
Second-Generation Sulfonylureas	29,213	5,815.69	72.71	0.20	8	1.38	0.27				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	29,213	12,890.50	161.17	0.44	8	0.62	0.27	-0.93	-0.41	0.41 (0.18, 0.94)	0.035
Second-Generation Sulfonylureas	29,213	12,866.51	160.87	0.44	20	1.55	0.68				
Presence of prior cardiovascular disease covariates											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	11,851	5,486.80	169.10	0.46	57	10.39	4.81	-13.31	-8.80	0.50 (0.38, 0.65)	<0.001
Second-Generation Sulfonylureas	128,334	73,676.66	209.69	0.57	1,746	23.70	13.61				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	11,593	2,502.00	78.83	0.22	30	11.99	2.59	-3.60	-0.78	0.77 (0.48, 1.24)	0.28
Second-Generation Sulfonylureas	11,593	2,502.00	78.83	0.22	39	15.59	3.36				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	11,593	5,383.29	169.61	0.46	56	10.40	4.83	-3.04	-1.90	0.78 (0.55, 1.10)	0.158
Second-Generation Sulfonylureas	11,593	5,802.18	182.80	0.50	78	13.44	6.73				

Table 16. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Sex

Medical Product	Sex	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Male	23,081	10,687.73	169.13	0.46	32	2.99	1.39	-6.57	-4.08	0.35 (0.25, 0.50)	<0.001
Second-Generation Sulfonylureas	Male	216,797	123,914.72	208.77	0.57	1,185	9.56	5.47				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	22,540	4,789.75	77.62	0.21	10	2.09	0.44	-2.09	-0.44	0.50 (0.23, 1.07)	0.074
Second-Generation Sulfonylureas	Male	22,540	4,789.75	77.62	0.21	20	4.18	0.89				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Male	22,540	10,458.80	169.48	0.46	31	2.96	1.38	-1.48	-0.75	0.69 (0.44, 1.09)	0.115
Second-Generation Sulfonylureas	Male	22,540	10,800.62	175.02	0.48	48	4.44	2.13				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	Female	18,608	7,972.09	156.48	0.43	33	4.14	1.77	-4.95	-3.15	0.56 (0.39, 0.80)	0.001
Second-Generation Sulfonylureas	Female	175,755	95,320.63	198.09	0.54	866	9.09	4.93				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	18,254	3,569.79	71.43	0.20	20	5.60	1.10	0.28	0.05	1.05 (0.56, 1.97)	0.873
Second-Generation Sulfonylureas	Female	18,254	3,569.79	71.43	0.20	19	5.32	1.04				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	Female	18,254	7,811.43	156.30	0.43	33	4.22	1.81	-1.42	-0.66	0.77 (0.49, 1.21)	0.257
Second-Generation Sulfonylureas	Female	18,254	7,970.51	159.48	0.44	45	5.65	2.47				

Table 17. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) by Analysis Type and Age Group

Medical Product	Age Group (years)	Number of New Users	Person Years at Risk	Average Person Days at Risk	Average Person Years at Risk	Number of Events	Incidence Rate per 1000 Person Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	18-64	33,574	14,428.02	156.96	0.43	22	1.52	0.66	-1.96	-1.07	0.48 (0.31, 0.75)	0.001
Second-Generation Sulfonylureas	18-64	263,637	130,666.25	181.03	0.50	456	3.49	1.73				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	32,783	6,308.29	70.28	0.19	10	1.59	0.31	-1.27	-0.24	0.56 (0.26, 1.20)	0.136
Second-Generation Sulfonylureas	18-64	32,783	6,308.29	70.28	0.19	18	2.85	0.55				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	18-64	32,783	14,075.25	156.82	0.43	21	1.49	0.64	-0.84	-0.34	0.66 (0.38, 1.15)	0.141
Second-Generation Sulfonylureas	18-64	32,783	13,744.64	153.14	0.42	32	2.33	0.98				
Unmatched Analysis (Site-adjusted only)												
Saxagliptin	65+	8,115	4,231.81	190.47	0.52	43	10.16	5.30	-7.85	-7.07	0.54 (0.39, 0.73)	<0.001
Second-Generation Sulfonylureas	65+	128,915	88,569.10	250.94	0.69	1,595	18.01	12.37				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	8,036	2,060.62	93.66	0.26	24	11.65	2.99	-3.88	-1.00	0.75 (0.44, 1.27)	0.287
Second-Generation Sulfonylureas	65+	8,036	2,060.62	93.66	0.26	32	15.53	3.98				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01												
Saxagliptin	65+	8,036	4,188.82	190.39	0.52	43	10.27	5.35	-2.28	-2.24	0.82 (0.55, 1.21)	0.32
Second-Generation Sulfonylureas	65+	8,036	4,864.19	221.09	0.61	61	12.54	7.59				

Figure 1a. Propensity Score Distributions for New Users of Saxagliptin and Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unmatched, Aggregated

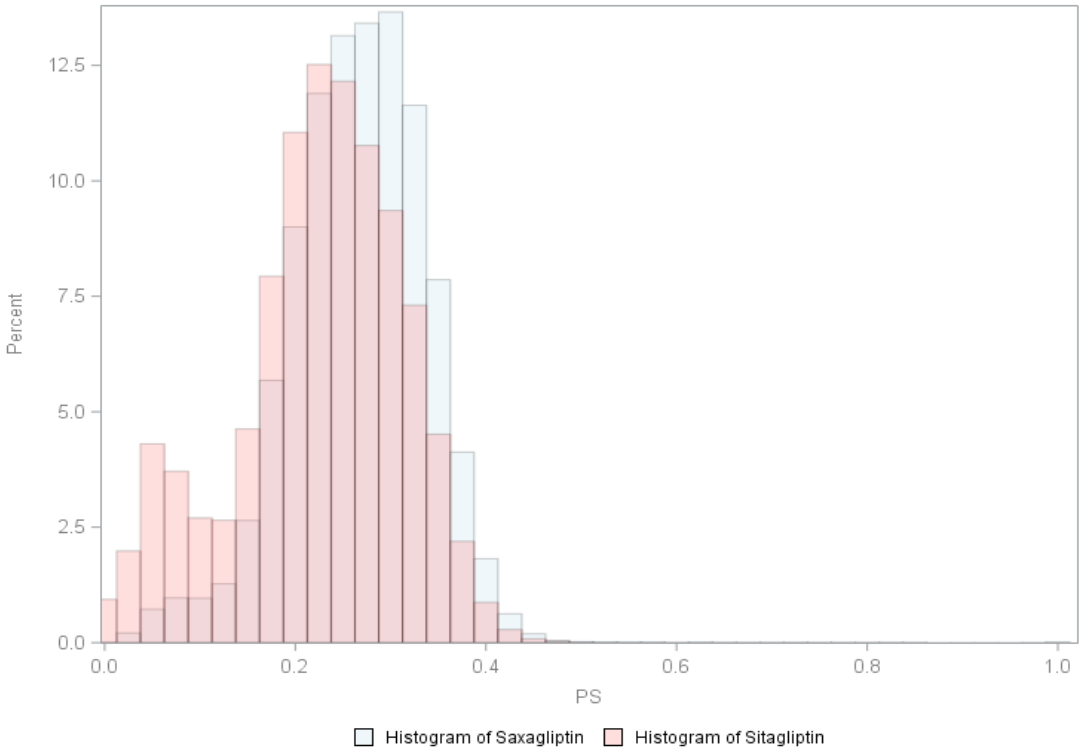


Figure 1b. Propensity Score Distributions for New Users of Saxagliptin and Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Matched, Aggregated

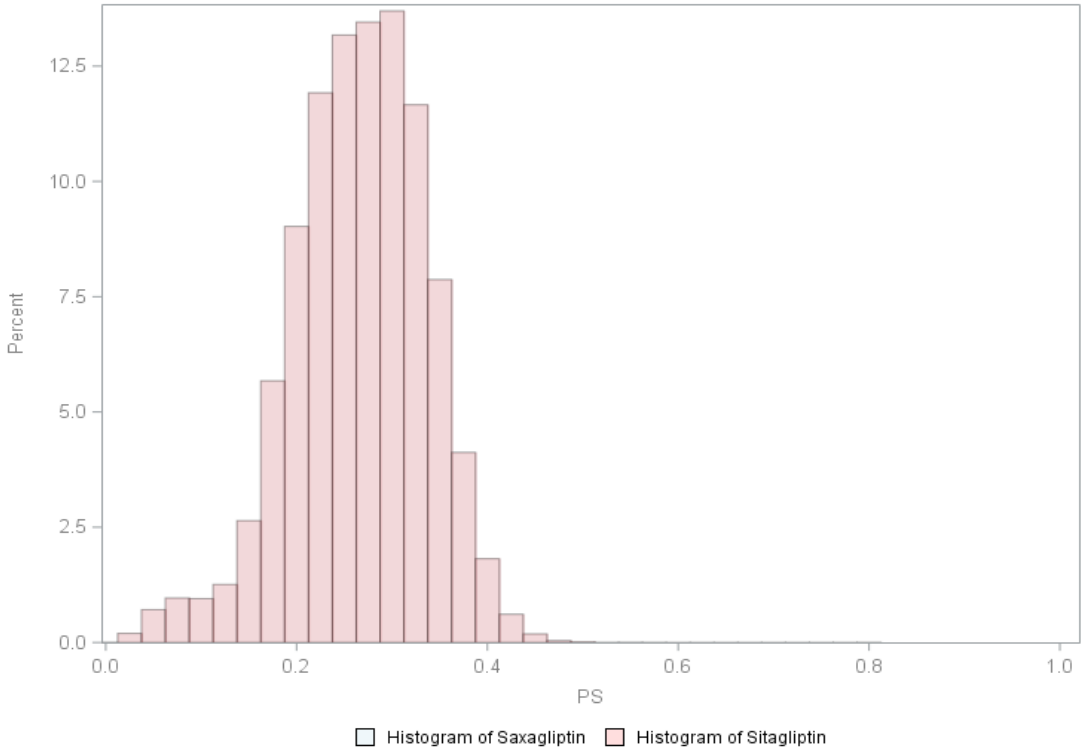


Figure 2a. Propensity Score Distributions for New Users of Saxagliptin and Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unmatched, Aggregated

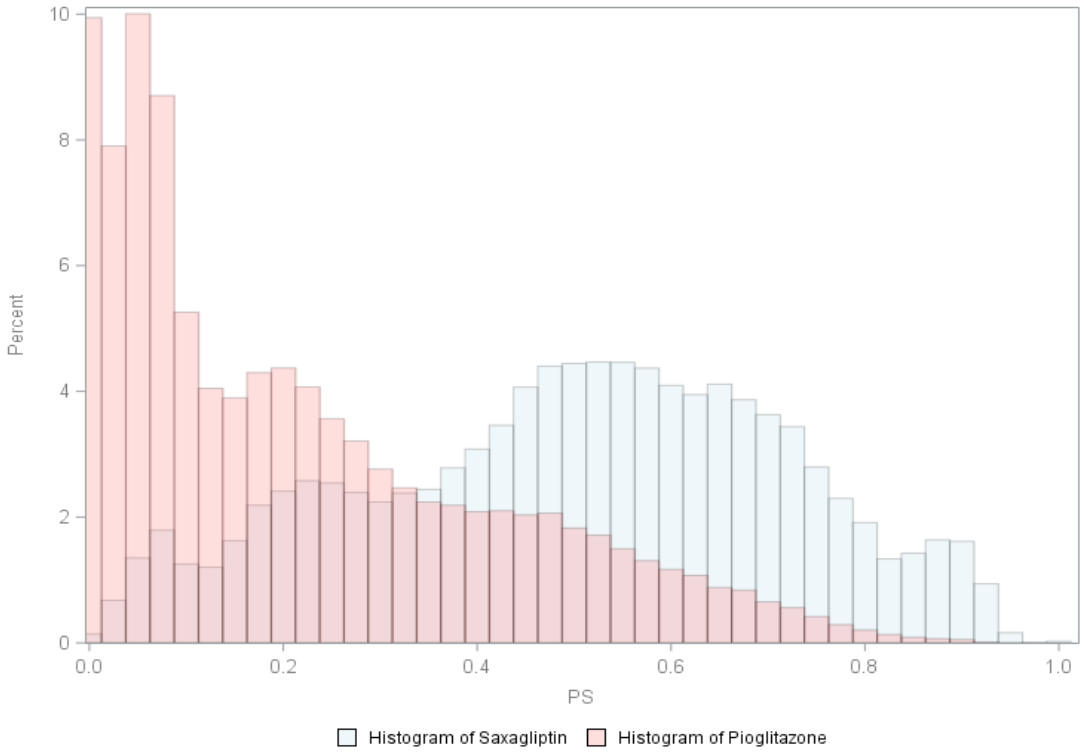


Figure 2b. Propensity Score Distributions for New Users of Saxagliptin and Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Matched, Aggregated

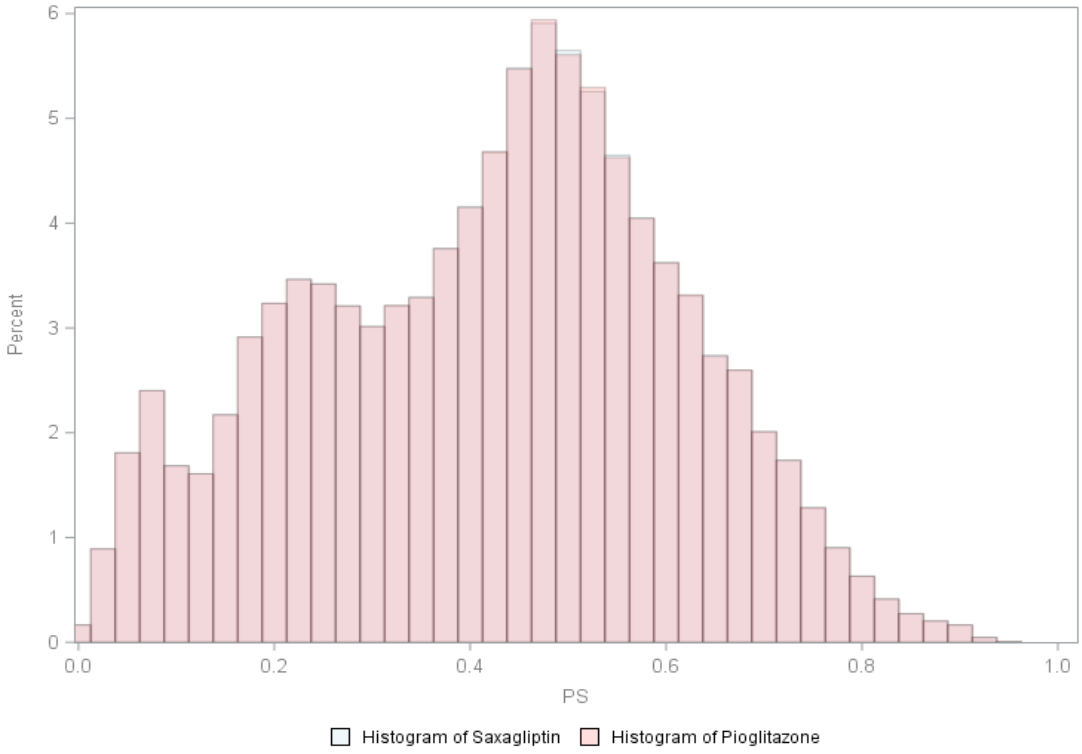


Figure 3a. Propensity Score Distributions for New Users of Saxagliptin and Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unmatched, Aggregated

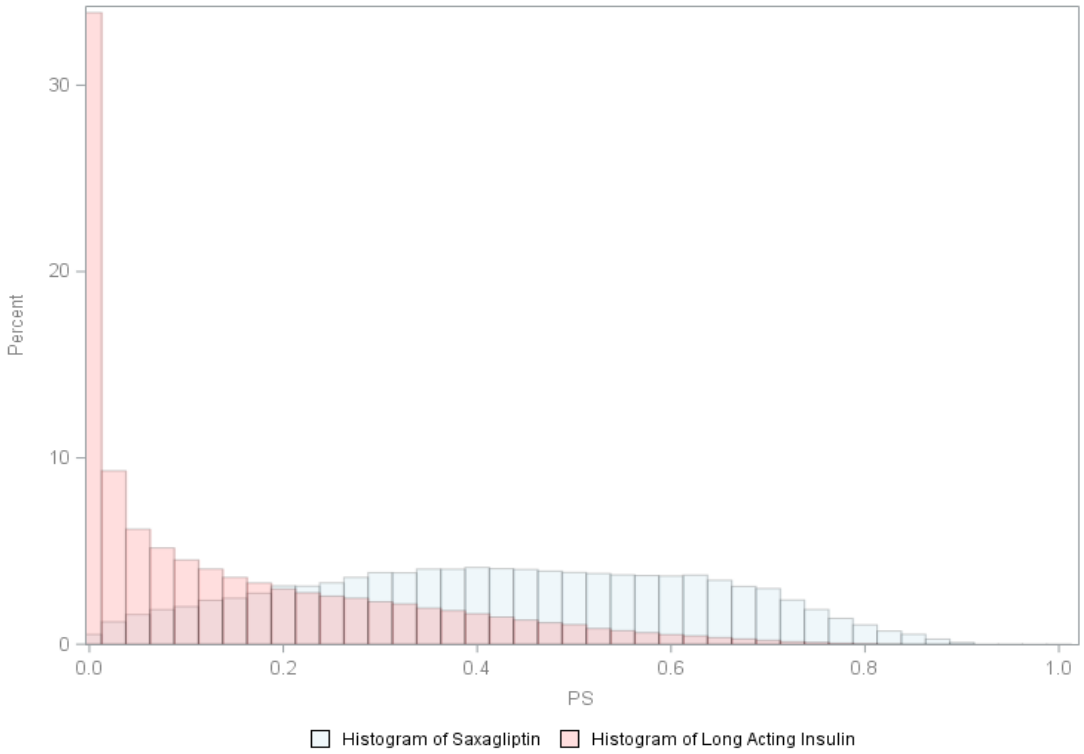


Figure 3b. Propensity Score Distributions for New Users of Saxagliptin and Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Matched, Aggregated

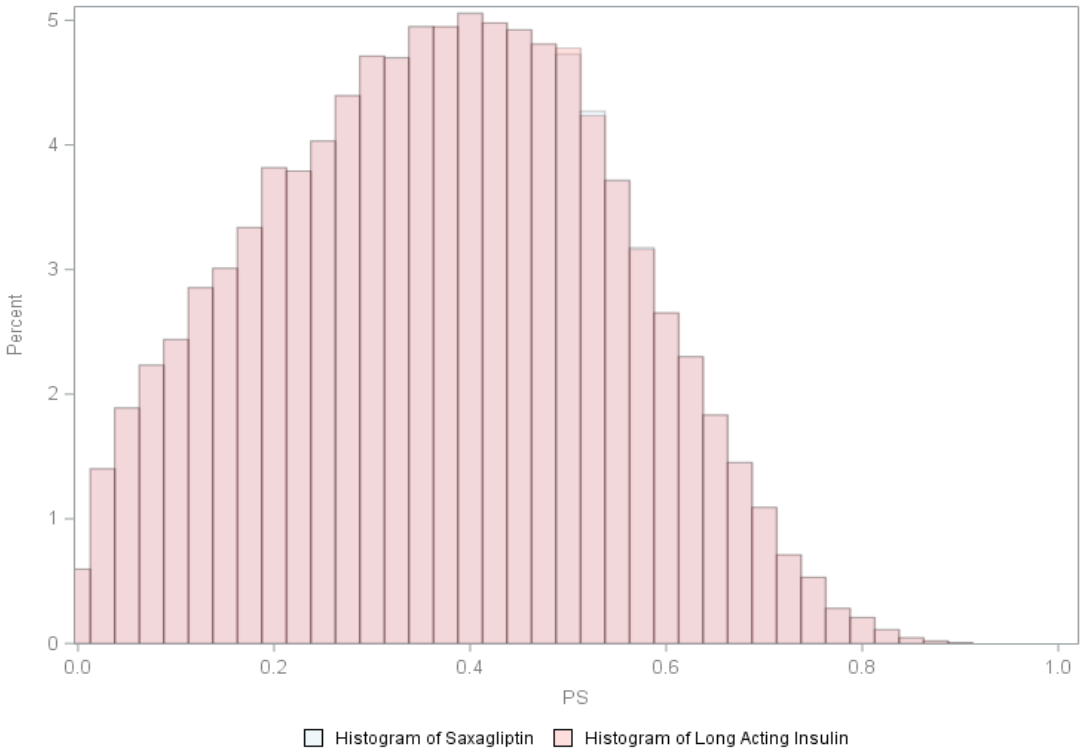


Figure 4a. Propensity Score Distributions for New Users of Saxagliptin and Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unmatched, Aggregated

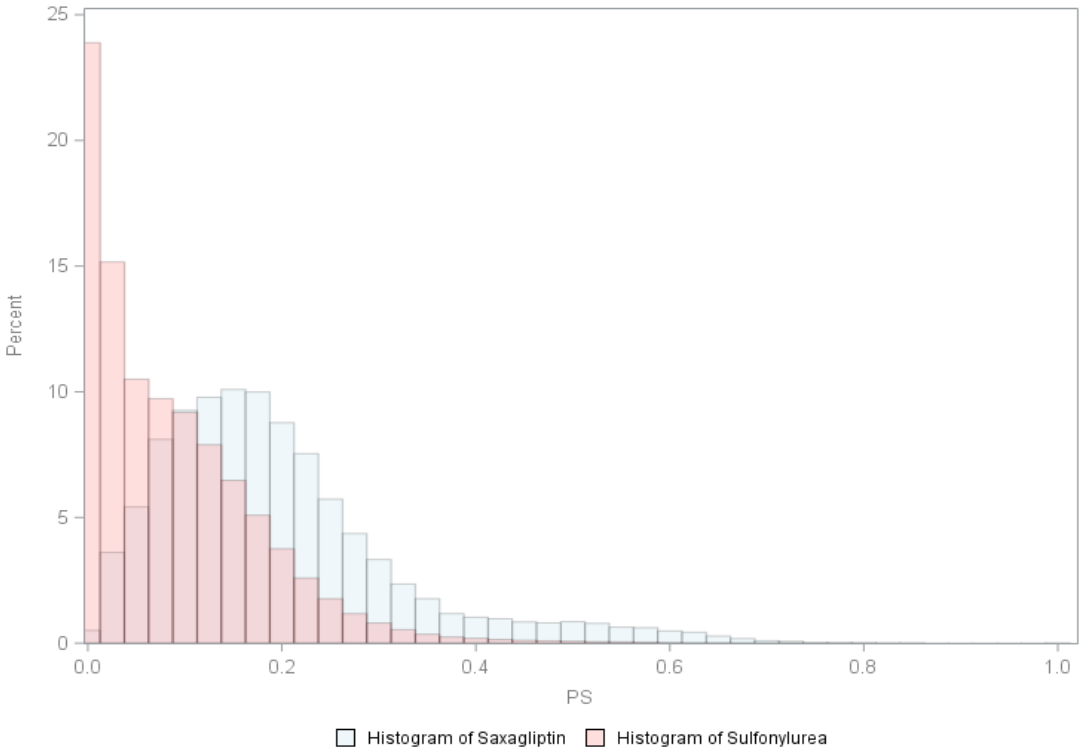


Figure 4b. Propensity Score Distributions for New Users of Saxagliptin and Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Matched, Aggregated

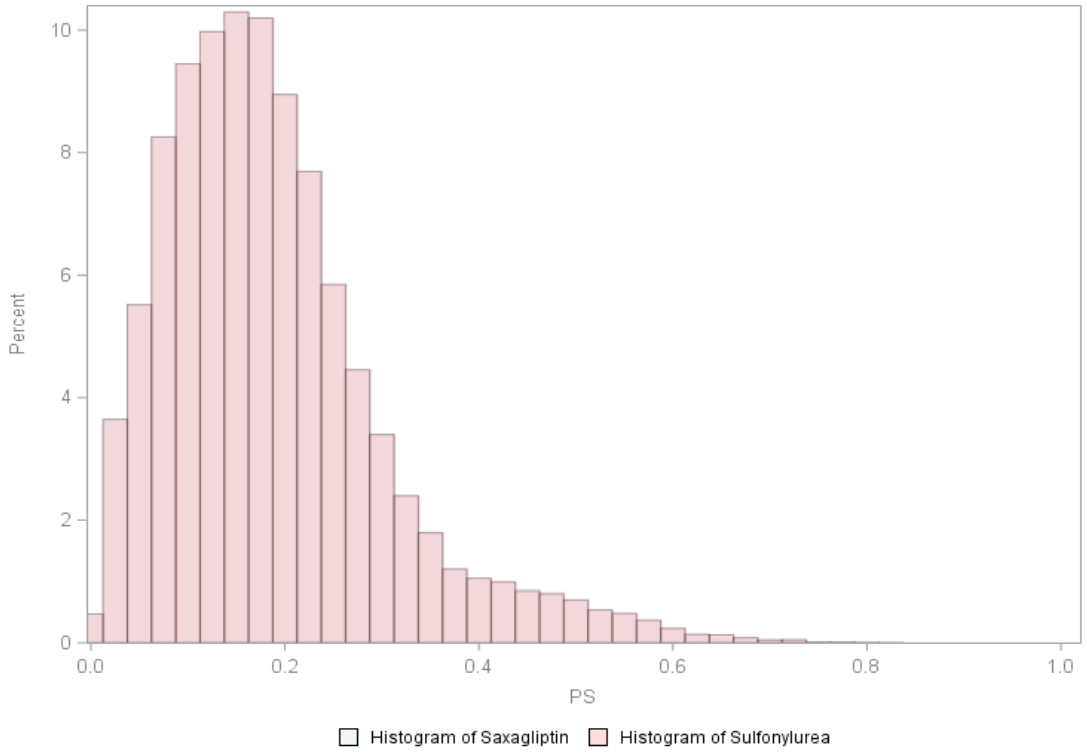


Figure 5. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Sitagliptin in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unconditional Matched Cohort

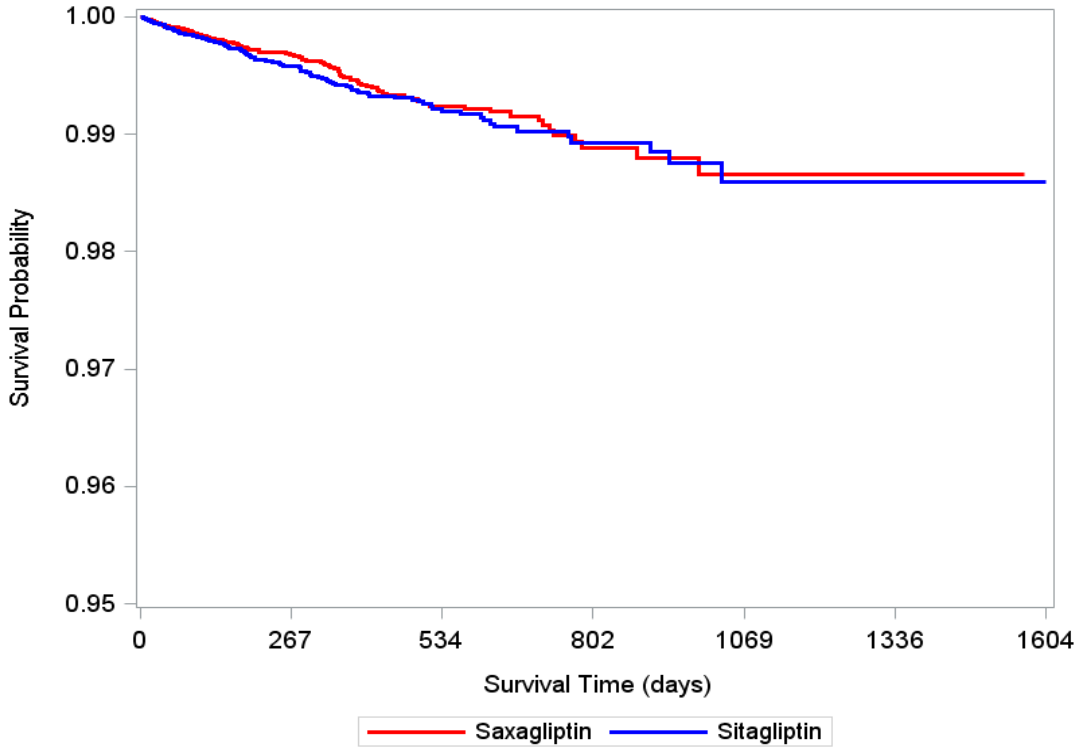


Figure 6. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Pioglitazone in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unconditional Matched Cohort

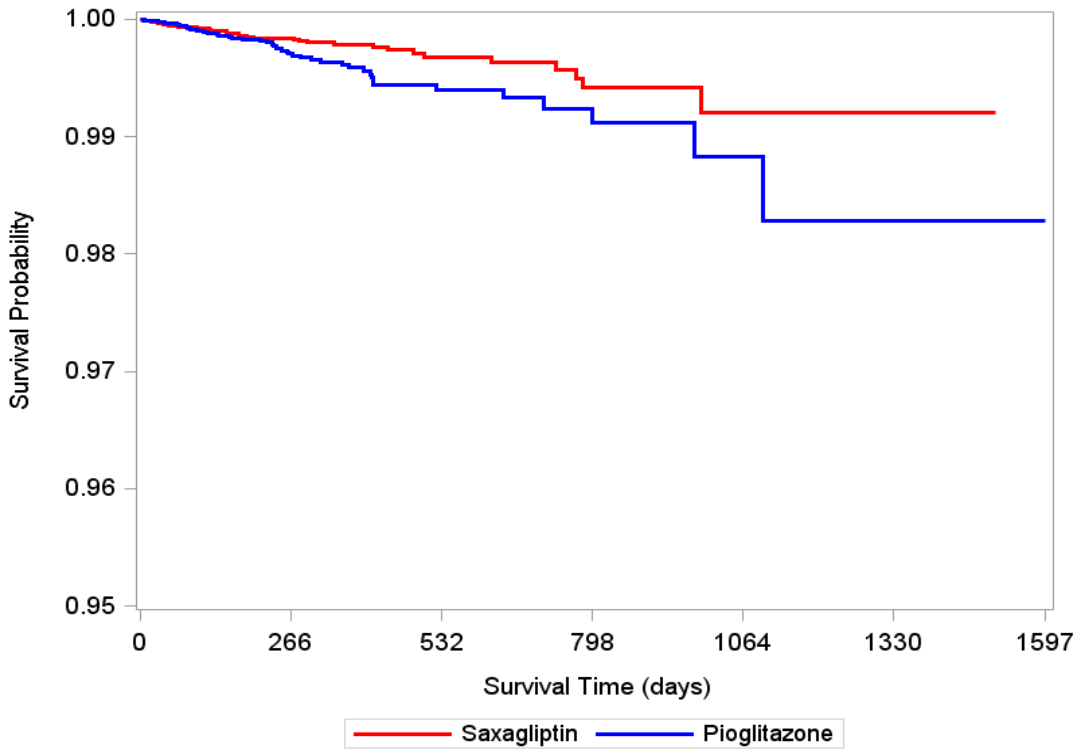


Figure 7. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Long-Acting Insulins in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unconditional Matched Cohort

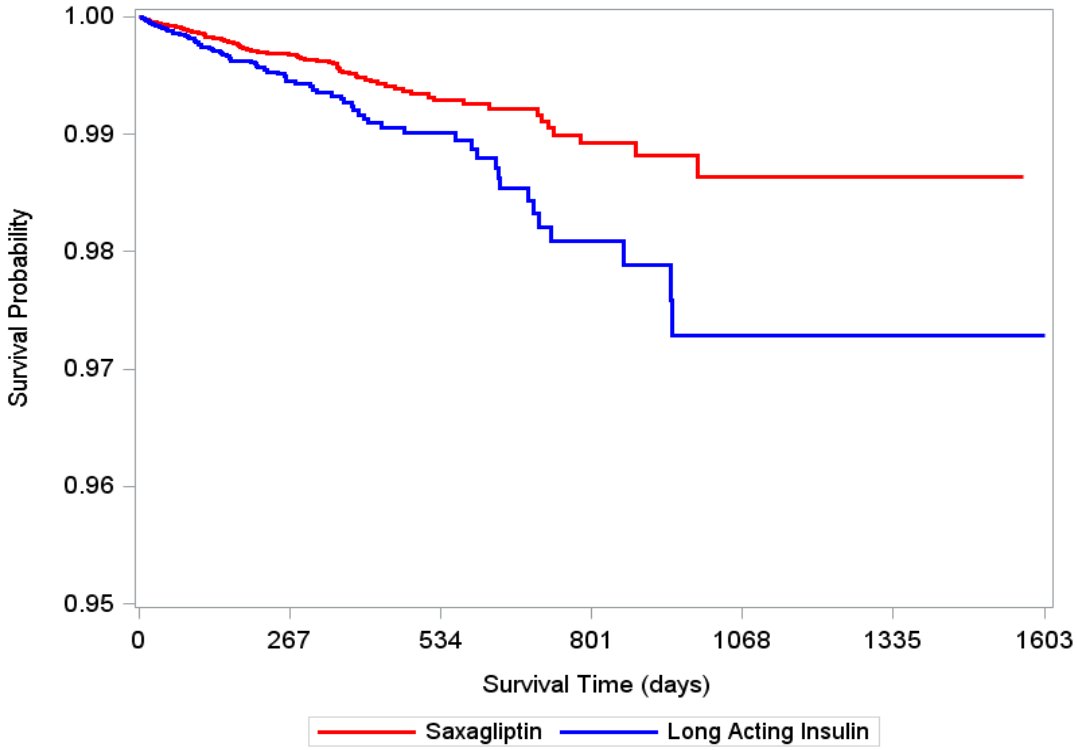
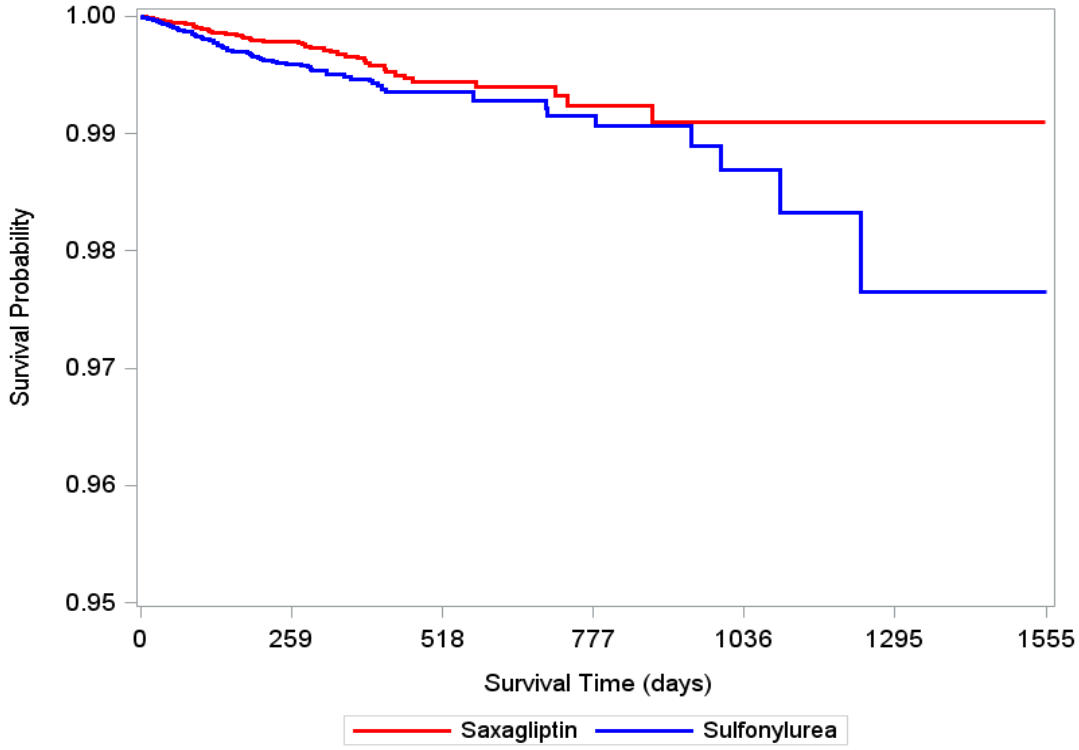


Figure 8. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas in the Sentinel Distributed Database (SDD) between August 1, 2009 and July 31, 2014, (Replication) Unconditional Matched Cohort



Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request End Date (July 31, 2014)

DP ID[1]	DP Start Date[2]	DP End Date[2]
DP01	01/01/2000	03/31/2014
DP02	01/01/2004	05/31/2014
DP03	01/01/2000	12/31/2012
DP05	01/01/2006	04/30/2014
DP06	01/01/2000	06/30/2014
DP07	06/01/2007	01/31/2014
DP08	01/01/2000	12/31/2012
DP10	01/01/2000	07/31/2014
DP13	01/01/2008	06/30/2014
DP14	01/01/2000	07/31/2014
DP15	01/01/2008	12/31/2013
DP16	01/01/2000	06/30/2012
DP17	01/01/2000	06/30/2012

[1]Data Partners listed contributed to the "replication" analysis; additional Data Partners contributed to the "updated" analysis. For more information on these analyses, please see the Overview.

[2]The start and end dates are based on the minimum and maximum dates within each DP. The month with the maximum date must have at least 80% of the number of records in the previous month.

Appendix B. List of Generic Names of Medical Products Used to Define Exposure and Incidence Criteria in this Report

Generic Name
Saxagliptin
saxagliptin HCl
saxagliptin HCl/metformin HCl
Sitagliptin
sitagliptin phos/metformin HCl
sitagliptin/simvastatin
sitagliptin phosphate
Long-Acting Insulin
hum insulin nph/reg insulin hm
insulin glargine,hum.rec.anlog
insulin nph human semi-syn
insulin nph s-s/reg insuln s-s
insuln asp prt/insulin aspart
nph, human insulin isophane
insulin detemir
insulin npl/insulin lispro
ins zn,bf (p)/ins zn,pk (p)
insul,pk pure/insul nph,pk-p
insulin isophane nph,bf-pk
insulin protamine zinc,beef
insulin protamine zn,beef (p)
insulin protamine zn,bf-pk
insulin protamine zn,pork (p)
insulin zinc beef
insulin zinc ext,beef (p)
insulin zinc extend human rec
insulin zinc extended,beef
insulin zinc extended,bf-pk
insulin zinc human rec
insulin zinc human semi-syn
insulin zinc prompt,beef
insulin zinc prompt,bf-pk
insulin zinc prompt,pork pure
insulin zinc,beef purified
insulin zinc,beef-pork
insulin zinc,pork purified
Pioglitazone
alogliptin benz/pioglitzone
pioglitazone HCl
pioglitazone HCl/metformin HCl
pioglitazone HCl/glimepiride
Second Generation Sulfonylurea
glipizide/metformin HCl
glyburide/metformin HCl
pioglitazone HCl/glimepiride
glimepiride
glipizide

Appendix B. List of Generic Names of Medical Products Used to Define Exposure and Incidence Criteria in this Report

Generic Name
glyburide
glyburide,micronized
rosiglitazone/glimepiride

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
	Diabetes		
250	Diabetes mellitus	ICD-9-CM	Diagnosis
250.0	Diabetes mellitus without mention of complication	ICD-9-CM	Diagnosis
250.00	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.01	Diabetes mellitus without mention of complication, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.02	Diabetes mellitus without mention of complication, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.03	Diabetes mellitus without mention of complication, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.1	Diabetes with ketoacidosis	ICD-9-CM	Diagnosis
250.10	Diabetes with ketoacidosis, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.11	Diabetes with ketoacidosis, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.12	Diabetes with ketoacidosis, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.13	Diabetes with ketoacidosis, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.2	Diabetes with hyperosmolarity	ICD-9-CM	Diagnosis
250.20	Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.21	Diabetes with hyperosmolarity, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.22	Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.23	Diabetes with hyperosmolarity, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.3	Diabetes with other coma	ICD-9-CM	Diagnosis
250.30	Diabetes with other coma, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.31	Diabetes with other coma, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.32	Diabetes with other coma, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.33	Diabetes with other coma, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.4	Diabetes with renal manifestations	ICD-9-CM	Diagnosis
250.40	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.41	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.42	Diabetes with renal manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.43	Diabetes with renal manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.5	Diabetes with ophthalmic manifestations	ICD-9-CM	Diagnosis
250.50	Diabetes with ophthalmic manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.51	Diabetes with ophthalmic manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.52	Diabetes with ophthalmic manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.53	Diabetes with ophthalmic manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.6	Diabetes with neurological manifestations	ICD-9-CM	Diagnosis
250.60	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
250.61	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.62	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.63	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.7	Diabetes with peripheral circulatory disorders	ICD-9-CM	Diagnosis
250.70	Diabetes with peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.71	Diabetes with peripheral circulatory disorders, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.72	Diabetes with peripheral circulatory disorders, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.73	Diabetes with peripheral circulatory disorders, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.8	Diabetes with other specified manifestations	ICD-9-CM	Diagnosis
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.81	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.82	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.83	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.9	Diabetes with unspecified complication	ICD-9-CM	Diagnosis
250.90	Diabetes with unspecified complication, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.91	Diabetes with unspecified complication, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.92	Diabetes with unspecified complication, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.93	Diabetes with unspecified complication, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
	Congestive Heart Failure		
402.01	Malignant hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.11	Benign hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.91	Hypertensive heart disease, unspecified, with heart failure	ICD-9-CM	Diagnosis
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
428	Heart failure	ICD-9-CM	Diagnosis
428.0	Congestive heart failure, unspecified	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
428.1	Left heart failure	ICD-9-CM	Diagnosis
428.2	Systolic heart failure	ICD-9-CM	Diagnosis
428.20	Unspecified systolic heart failure	ICD-9-CM	Diagnosis
428.21	Acute systolic heart failure	ICD-9-CM	Diagnosis
428.22	Chronic systolic heart failure	ICD-9-CM	Diagnosis
428.23	Acute on chronic systolic heart failure	ICD-9-CM	Diagnosis
428.3	Diastolic heart failure	ICD-9-CM	Diagnosis
428.30	Unspecified diastolic heart failure	ICD-9-CM	Diagnosis
428.31	Acute diastolic heart failure	ICD-9-CM	Diagnosis
428.32	Chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.33	Acute on chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.4	Combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.40	Unspecified combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.41	Acute combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.42	Chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.43	Acute on chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.9	Unspecified heart failure	ICD-9-CM	Diagnosis
	End of Pregnancy		
630	Hydatidiform mole	ICD-9-CM	Diagnosis
631	Other abnormal product of conception	ICD-9-CM	Diagnosis
631.0	Inappropriate change in quantitative human chorionic gonadotropin (hCG) in early pregnancy	ICD-9-CM	Diagnosis
631.8	Other abnormal products of conception	ICD-9-CM	Diagnosis
632	Missed abortion	ICD-9-CM	Diagnosis
633	Ectopic pregnancy	ICD-9-CM	Diagnosis
633.0	Abdominal pregnancy	ICD-9-CM	Diagnosis
633.00	Abdominal pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.01	Abdominal pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
633.1	Tubal pregnancy	ICD-9-CM	Diagnosis
633.10	Tubal pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.11	Tubal pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
633.2	Ovarian pregnancy	ICD-9-CM	Diagnosis
633.20	Ovarian pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.21	Ovarian pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
633.8	Other ectopic pregnancy	ICD-9-CM	Diagnosis
633.80	Other ectopic pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.81	Other ectopic pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
633.9	Unspecified ectopic pregnancy	ICD-9-CM	Diagnosis
633.90	Unspecified ectopic pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.91	Unspecified ectopic pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
634	Spontaneous abortion	ICD-9-CM	Diagnosis
634.0	Spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
634.00	Unspecified spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
634.01	Incomplete spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
634.02	Complete spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
634.1	Spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.10	Unspecified spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.11	Incomplete spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.12	Complete spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.2	Spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.20	Unspecified spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.21	Incomplete spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.22	Complete spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.3	Spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.30	Unspecified spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.31	Incomplete spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.32	Complete spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.4	Spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.40	Unspecified spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.41	Incomplete spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.42	Complete spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.5	Spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.50	Unspecified spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.51	Incomplete spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.52	Complete spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.6	Spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis
634.60	Unspecified spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis
634.61	Incomplete spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis
634.62	Complete spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis
634.7	Spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.70	Unspecified spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.71	Incomplete spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.72	Complete spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.8	Spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.80	Unspecified spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.81	Incomplete spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.82	Complete spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.9	Spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
634.90	Unspecified spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
634.91	Incomplete spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
634.92	Complete spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
635	Legally induced abortion	ICD-9-CM	Diagnosis
635.0	Legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
635.00	Unspecified legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
635.01	Incomplete legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
635.02	Complete legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
635.1	Legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.10	Unspecified legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.11	Incomplete legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.12	Complete legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.2	Legally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
635.20	Unspecified legally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
635.21	Legally induced abortion complicated by damage to pelvic organs or tissues, incomplete	ICD-9-CM	Diagnosis
635.22	Complete legally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
635.3	Legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.30	Unspecified legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.31	Incomplete legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.32	Complete legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.4	Legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
635.40	Unspecified legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
635.41	Incomplete legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
635.42	Complete legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
635.5	Legally induced abortion complicated by shock	ICD-9-CM	Diagnosis
635.50	Unspecified legally induced abortion complicated by shock	ICD-9-CM	Diagnosis
635.51	Legally induced abortion, complicated by shock, incomplete	ICD-9-CM	Diagnosis
635.52	Complete legally induced abortion complicated by shock	ICD-9-CM	Diagnosis
635.6	Legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.60	Unspecified legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.61	Incomplete legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.62	Complete legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.7	Legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.70	Unspecified legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.71	Incomplete legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.72	Complete legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.8	Legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.80	Unspecified legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.81	Incomplete legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.82	Complete legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.9	Legally induced abortion without mention of complication	ICD-9-CM	Diagnosis
635.90	Unspecified legally induced abortion without mention of complication	ICD-9-CM	Diagnosis
635.91	Incomplete legally induced abortion without mention of complication	ICD-9-CM	Diagnosis
635.92	Complete legally induced abortion without mention of complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
636	Illegally induced abortion	ICD-9-CM	Diagnosis
636.0	Illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.00	Unspecified illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.01	Incomplete illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.02	Complete illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.1	Illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.10	Unspecified illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.11	Incomplete illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.12	Complete illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.2	Illegally induced abortion complicated by damage to pelvic organs or tissue	ICD-9-CM	Diagnosis
636.20	Unspecified illegally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
636.21	Incomplete illegally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
636.22	Complete illegally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
636.3	Illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
636.30	Unspecified illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
636.31	Incomplete illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
636.32	Complete illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
636.4	Illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.40	Unspecified illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.41	Incomplete illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.42	Complete illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.5	Illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.50	Unspecified illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.51	Incomplete illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.52	Complete illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.6	Illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.60	Unspecified illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.61	Incomplete illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.62	Complete illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.7	Illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.70	Unspecified illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.71	Incomplete illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.72	Complete illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.8	Illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
636.80	Unspecified illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
636.81	Incomplete illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
636.82	Complete illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
636.9	Illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
636.90	Unspecified illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
636.91	Incomplete illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
636.92	Complete illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
637	Abortion, unspecified as to legality	ICD-9-CM	Diagnosis
637.0	Abortion, unspecified as to legality, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.00	Abortion, unspecified as to completion or legality, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.01	Abortion, unspecified as to legality, incomplete, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.02	Abortion, unspecified as to legality, complete, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.1	Abortion, unspecified as to legality, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
637.10	Abortion, unspecified as to completion or legality, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
637.11	Abortion, unspecified as to legality, incomplete, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
637.12	Abortion, unspecified as to legality, complete, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
637.2	Abortion, unspecified as to legality, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.20	Abortion, unspecified as to completion or legality, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.21	Abortion, unspecified as to legality, incomplete, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.22	Abortion, unspecified as to legality, complete, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.3	Abortion, unspecified as to legality, complicated by renal failure	ICD-9-CM	Diagnosis
637.30	Abortion, unspecified as to completion or legality, complicated by renal failure	ICD-9-CM	Diagnosis
637.31	Abortion, unspecified as to legality, incomplete, complicated by renal failure	ICD-9-CM	Diagnosis
637.32	Abortion, unspecified as to legality, complete, complicated by renal failure	ICD-9-CM	Diagnosis
637.4	Abortion, unspecified as to legality, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.40	Abortion, unspecified as to completion or legality, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.41	Abortion, unspecified as to legality, incomplete, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.42	Abortion, unspecified as to legality, complete, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.5	Abortion, unspecified as to legality, complicated by shock	ICD-9-CM	Diagnosis
637.50	Abortion, unspecified as to completion or legality, complicated by shock	ICD-9-CM	Diagnosis
637.51	Abortion, unspecified as to legality, incomplete, complicated by shock	ICD-9-CM	Diagnosis
637.52	Abortion, unspecified as to legality, complete, complicated by shock	ICD-9-CM	Diagnosis
637.6	Abortion, unspecified as to legality, complicated by embolism	ICD-9-CM	Diagnosis
637.60	Abortion, unspecified as to completion or legality, complicated by embolism	ICD-9-CM	Diagnosis
637.61	Abortion, unspecified as to legality, incomplete, complicated by embolism	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
637.62	Abortion, unspecified as to legality, complete, complicated by embolism	ICD-9-CM	Diagnosis
637.7	Abortion, unspecified as to legality, with other specified complications	ICD-9-CM	Diagnosis
637.70	Abortion, unspecified as to completion or legality, with other specified complications	ICD-9-CM	Diagnosis
637.71	Abortion, unspecified as to legality, incomplete, with other specified complications	ICD-9-CM	Diagnosis
637.72	Abortion, unspecified as to legality, complete, with other specified complications	ICD-9-CM	Diagnosis
637.8	Abortion, unspecified as to legality, with unspecified complication	ICD-9-CM	Diagnosis
637.80	Abortion, unspecified as to completion or legality, with unspecified complication	ICD-9-CM	Diagnosis
637.81	Abortion, unspecified as to legality, incomplete, with unspecified complication	ICD-9-CM	Diagnosis
637.82	Abortion, unspecified as to legality, complete, with unspecified complication	ICD-9-CM	Diagnosis
637.9	Abortion, unspecified as to legality, without mention of complication	ICD-9-CM	Diagnosis
637.90	Unspecified type of abortion, unspecified as to completion or legality, without mention of complication	ICD-9-CM	Diagnosis
637.91	Abortion, unspecified as to legality, incomplete, without mention of complication	ICD-9-CM	Diagnosis
637.92	Abortion, unspecified as to legality, complete, without mention of complication	ICD-9-CM	Diagnosis
638	Failed attempted abortion	ICD-9-CM	Diagnosis
638.0	Failed attempted abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
638.1	Failed attempted abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
638.2	Failed attempted abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
638.3	Failed attempted abortion complicated by renal failure	ICD-9-CM	Diagnosis
638.4	Failed attempted abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
638.5	Failed attempted abortion complicated by shock	ICD-9-CM	Diagnosis
638.6	Failed attempted abortion complicated by embolism	ICD-9-CM	Diagnosis
638.7	Failed attempted abortion with other specified complication	ICD-9-CM	Diagnosis
638.8	Failed attempted abortion with unspecified complication	ICD-9-CM	Diagnosis
638.9	Failed attempted abortion without mention of complication	ICD-9-CM	Diagnosis
639	Complications following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.0	Genital tract and pelvic infection following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.1	Delayed or excessive hemorrhage following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.2	Damage to pelvic organs and tissues following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.3	Complications following abortion and ectopic and molar pregnancies, kidney failure	ICD-9-CM	Diagnosis
639.4	Metabolic disorders following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.5	Shock following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.6	Embolism following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.8	Other specified complication following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.9	Unspecified complication following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
640	Hemorrhage in early pregnancy	ICD-9-CM	Diagnosis
640.0	Threatened abortion	ICD-9-CM	Diagnosis
640.00	Threatened abortion, unspecified as to episode of care	ICD-9-CM	Diagnosis
640.01	Threatened abortion, delivered	ICD-9-CM	Diagnosis
640.03	Threatened abortion, antepartum	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
640.8	Other specified hemorrhage in early pregnancy	ICD-9-CM	Diagnosis
640.80	Other specified hemorrhage in early pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
640.81	Other specified hemorrhage in early pregnancy, delivered	ICD-9-CM	Diagnosis
640.83	Other specified hemorrhage in early pregnancy, antepartum	ICD-9-CM	Diagnosis
640.9	Unspecified hemorrhage in early pregnancy	ICD-9-CM	Diagnosis
640.90	Unspecified hemorrhage in early pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
640.91	Unspecified hemorrhage in early pregnancy, delivered	ICD-9-CM	Diagnosis
640.93	Unspecified hemorrhage in early pregnancy, antepartum	ICD-9-CM	Diagnosis
641	Antepartum hemorrhage, abruptio placentae, and placenta previa	ICD-9-CM	Diagnosis
641.0	Placenta previa without hemorrhage	ICD-9-CM	Diagnosis
641.00	Placenta previa without hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.01	Placenta previa without hemorrhage, with delivery	ICD-9-CM	Diagnosis
641.03	Placenta previa without hemorrhage, antepartum	ICD-9-CM	Diagnosis
641.1	Hemorrhage from placenta previa	ICD-9-CM	Diagnosis
641.10	Hemorrhage from placenta previa, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.11	Hemorrhage from placenta previa, with delivery	ICD-9-CM	Diagnosis
641.13	Hemorrhage from placenta previa, antepartum	ICD-9-CM	Diagnosis
641.2	Premature separation of placenta	ICD-9-CM	Diagnosis
641.20	Premature separation of placenta, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.21	Premature separation of placenta, with delivery	ICD-9-CM	Diagnosis
641.23	Premature separation of placenta, antepartum	ICD-9-CM	Diagnosis
641.3	Antepartum hemorrhage associated with coagulation defects	ICD-9-CM	Diagnosis
641.30	Antepartum hemorrhage associated with coagulation defects, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.31	Antepartum hemorrhage associated with coagulation defects, with delivery	ICD-9-CM	Diagnosis
641.33	Antepartum hemorrhage associated with coagulation defect, antepartum	ICD-9-CM	Diagnosis
641.8	Other antepartum hemorrhage	ICD-9-CM	Diagnosis
641.80	Other antepartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.81	Other antepartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
641.83	Other antepartum hemorrhage, antepartum	ICD-9-CM	Diagnosis
641.9	Unspecified antepartum hemorrhage	ICD-9-CM	Diagnosis
641.90	Unspecified antepartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.91	Unspecified antepartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
641.93	Unspecified antepartum hemorrhage, antepartum	ICD-9-CM	Diagnosis
642	Hypertension complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
642.0	Benign essential hypertension complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
642.00	Benign essential hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.01	Benign essential hypertension with delivery	ICD-9-CM	Diagnosis
642.02	Benign essential hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.03	Benign essential hypertension antepartum	ICD-9-CM	Diagnosis
642.04	Benign essential hypertension, complicating pregnancy, childbirth, and the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
642.1	Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
642.10	Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.11	Hypertension secondary to renal disease, with delivery	ICD-9-CM	Diagnosis
642.12	Hypertension secondary to renal disease, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.13	Hypertension secondary to renal disease, antepartum	ICD-9-CM	Diagnosis
642.14	Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
642.2	Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
642.20	Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.21	Other pre-existing hypertension, with delivery	ICD-9-CM	Diagnosis
642.22	Other pre-existing hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.23	Other pre-existing hypertension, antepartum	ICD-9-CM	Diagnosis
642.24	Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
642.3	Transient hypertension of pregnancy	ICD-9-CM	Diagnosis
642.30	Transient hypertension of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.31	Transient hypertension of pregnancy, with delivery	ICD-9-CM	Diagnosis
642.32	Transient hypertension of pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.33	Transient hypertension of pregnancy, antepartum	ICD-9-CM	Diagnosis
642.34	Transient hypertension of pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
642.4	Mild or unspecified pre-eclampsia	ICD-9-CM	Diagnosis
642.40	Mild or unspecified pre-eclampsia, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.41	Mild or unspecified pre-eclampsia, with delivery	ICD-9-CM	Diagnosis
642.42	Mild or unspecified pre-eclampsia, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.43	Mild or unspecified pre-eclampsia, antepartum	ICD-9-CM	Diagnosis
642.44	Mild or unspecified pre-eclampsia, postpartum condition or complication	ICD-9-CM	Diagnosis
642.5	Severe pre-eclampsia	ICD-9-CM	Diagnosis
642.50	Severe pre-eclampsia, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.51	Severe pre-eclampsia, with delivery	ICD-9-CM	Diagnosis
642.52	Severe pre-eclampsia, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.53	Severe pre-eclampsia, antepartum	ICD-9-CM	Diagnosis
642.54	Severe pre-eclampsia, postpartum condition or complication	ICD-9-CM	Diagnosis
642.6	Eclampsia complicating pregnancy, childbirth or the puerperium	ICD-9-CM	Diagnosis
642.60	Eclampsia complicating pregnancy, childbirth or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.61	Eclampsia, with delivery	ICD-9-CM	Diagnosis
642.62	Eclampsia, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.63	Eclampsia, antepartum	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
642.64	Eclampsia, postpartum condition or complication	ICD-9-CM	Diagnosis
642.7	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension	ICD-9-CM	Diagnosis
642.70	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.71	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery	ICD-9-CM	Diagnosis
642.72	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.73	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, antepartum	ICD-9-CM	Diagnosis
642.74	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, postpartum condition or complication	ICD-9-CM	Diagnosis
642.9	Unspecified hypertension complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
642.90	Unspecified hypertension complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.91	Unspecified hypertension, with delivery	ICD-9-CM	Diagnosis
642.92	Unspecified hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.93	Unspecified hypertension antepartum	ICD-9-CM	Diagnosis
642.94	Unspecified hypertension complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
643	Excessive vomiting in pregnancy	ICD-9-CM	Diagnosis
643.0	Mild hyperemesis gravidarum	ICD-9-CM	Diagnosis
643.00	Mild hyperemesis gravidarum, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.01	Mild hyperemesis gravidarum, delivered	ICD-9-CM	Diagnosis
643.03	Mild hyperemesis gravidarum, antepartum	ICD-9-CM	Diagnosis
643.1	Hyperemesis gravidarum with metabolic disturbance	ICD-9-CM	Diagnosis
643.10	Hyperemesis gravidarum with metabolic disturbance, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.11	Hyperemesis gravidarum with metabolic disturbance, delivered	ICD-9-CM	Diagnosis
643.13	Hyperemesis gravidarum with metabolic disturbance, antepartum	ICD-9-CM	Diagnosis
643.2	Late vomiting of pregnancy	ICD-9-CM	Diagnosis
643.20	Late vomiting of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.21	Late vomiting of pregnancy, delivered	ICD-9-CM	Diagnosis
643.23	Late vomiting of pregnancy, antepartum	ICD-9-CM	Diagnosis
643.8	Other vomiting complicating pregnancy	ICD-9-CM	Diagnosis
643.80	Other vomiting complicating pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.81	Other vomiting complicating pregnancy, delivered	ICD-9-CM	Diagnosis
643.83	Other vomiting complicating pregnancy, antepartum	ICD-9-CM	Diagnosis
643.9	Unspecified vomiting of pregnancy	ICD-9-CM	Diagnosis
643.90	Unspecified vomiting of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.91	Unspecified vomiting of pregnancy, delivered	ICD-9-CM	Diagnosis
643.93	Unspecified vomiting of pregnancy, antepartum	ICD-9-CM	Diagnosis
644	Early or threatened labor	ICD-9-CM	Diagnosis
644.0	Threatened premature labor	ICD-9-CM	Diagnosis
644.00	Threatened premature labor, unspecified as to episode of care	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
644.03	Threatened premature labor, antepartum	ICD-9-CM	Diagnosis
644.1	Other threatened labor	ICD-9-CM	Diagnosis
644.10	Other threatened labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
644.13	Other threatened labor, antepartum	ICD-9-CM	Diagnosis
644.2	Early onset of delivery	ICD-9-CM	Diagnosis
644.20	Early onset of delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
644.21	Early onset of delivery, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
645	Late pregnancy	ICD-9-CM	Diagnosis
645.0	Prolonged pregnancy	ICD-9-CM	Diagnosis
645.00	Prolonged pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
645.01	Prolonged pregnancy, with delivery	ICD-9-CM	Diagnosis
645.03	Prolonged pregnancy, antepartum	ICD-9-CM	Diagnosis
645.1	Post term pregnancy	ICD-9-CM	Diagnosis
645.10	Post term pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
645.11	Post term pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
645.13	Post term pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
645.2	Prolonged pregnancy	ICD-9-CM	Diagnosis
645.20	Prolonged pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
645.21	Prolonged pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
645.23	Prolonged pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
646	Other complications of pregnancy, not elsewhere classified	ICD-9-CM	Diagnosis
646.0	Papyraceous fetus	ICD-9-CM	Diagnosis
646.00	Papyraceous fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.01	Papyraceous fetus, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
646.03	Papyraceous fetus, antepartum	ICD-9-CM	Diagnosis
646.1	Edema or excessive weight gain in pregnancy, without mention of hypertension	ICD-9-CM	Diagnosis
646.10	Edema or excessive weight gain in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.11	Edema or excessive weight gain in pregnancy, with delivery, with or without mention of antepartum complication	ICD-9-CM	Diagnosis
646.12	Edema or excessive weight gain in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.13	Edema or excessive weight gain, antepartum	ICD-9-CM	Diagnosis
646.14	Edema or excessive weight gain in pregnancy, without mention of hypertension, postpartum condition or complication	ICD-9-CM	Diagnosis
646.2	Unspecified renal disease in pregnancy, without mention of hypertension	ICD-9-CM	Diagnosis
646.20	Unspecified renal disease in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.21	Unspecified renal disease in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.22	Unspecified renal disease in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.23	Unspecified antepartum renal disease	ICD-9-CM	Diagnosis
646.24	Unspecified renal disease in pregnancy, without mention of hypertension, postpartum condition or complication	ICD-9-CM	Diagnosis
646.3	Pregnancy complication, recurrent pregnancy loss	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
646.30	Pregnancy complication, recurrent pregnancy loss, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.31	Pregnancy complication, recurrent pregnancy loss, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
646.33	Pregnancy complication, recurrent pregnancy loss, antepartum condition or complication	ICD-9-CM	Diagnosis
646.4	Peripheral neuritis in pregnancy	ICD-9-CM	Diagnosis
646.40	Peripheral neuritis in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.41	Peripheral neuritis in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.42	Peripheral neuritis in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.43	Peripheral neuritis antepartum	ICD-9-CM	Diagnosis
646.44	Peripheral neuritis in pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.5	Asymptomatic bacteriuria in pregnancy	ICD-9-CM	Diagnosis
646.50	Asymptomatic bacteriuria in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.51	Asymptomatic bacteriuria in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.52	Asymptomatic bacteriuria in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.53	Asymptomatic bacteriuria antepartum	ICD-9-CM	Diagnosis
646.54	Asymptomatic bacteriuria in pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.6	Infections of genitourinary tract in pregnancy	ICD-9-CM	Diagnosis
646.60	Infections of genitourinary tract in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.61	Infections of genitourinary tract in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.62	Infections of genitourinary tract in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.63	Infections of genitourinary tract antepartum	ICD-9-CM	Diagnosis
646.64	Infections of genitourinary tract in pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.7	Liver and biliary tract disorders in pregnancy	ICD-9-CM	Diagnosis
646.70	Liver and biliary tract disorders in pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
646.71	Liver and biliary tract disorders in pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
646.73	Liver and biliary tract disorders in pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
646.8	Other specified complications of pregnancy	ICD-9-CM	Diagnosis
646.80	Other specified complication of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.81	Other specified complication of pregnancy, with delivery	ICD-9-CM	Diagnosis
646.82	Other specified complications of pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.83	Other specified complication, antepartum	ICD-9-CM	Diagnosis
646.84	Other specified complications of pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.9	Unspecified complication of pregnancy	ICD-9-CM	Diagnosis
646.90	Unspecified complication of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.91	Unspecified complication of pregnancy, with delivery	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
646.93	Unspecified complication of pregnancy, antepartum	ICD-9-CM	Diagnosis
647	Infectious and parasitic conditions in the mother classifiable elsewhere, but complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.0	Maternal syphilis complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.00	Maternal syphilis, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.01	Maternal syphilis, complicating pregnancy, with delivery	ICD-9-CM	Diagnosis
647.02	Maternal syphilis, complicating pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.03	Maternal syphilis, antepartum	ICD-9-CM	Diagnosis
647.04	Maternal syphilis complicating pregnancy, childbrith, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.1	Maternal gonorrhea complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.10	Maternal gonorrhea complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.11	Maternal gonorrhea with delivery	ICD-9-CM	Diagnosis
647.12	Maternal gonorrhea, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.13	Maternal gonorrhea, antepartum	ICD-9-CM	Diagnosis
647.14	Maternal gonorrhea complicating pregnancy, childbrith, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.2	Other maternal venereal diseases complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.20	Other maternal venereal diseases, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.21	Other maternal venereal diseases with delivery	ICD-9-CM	Diagnosis
647.22	Other maternal venereal diseases with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.23	Other maternal venereal diseases, antepartum condition or complication	ICD-9-CM	Diagnosis
647.24	Other venereal diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.3	Maternal tuberculosis complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.30	Maternal tuberculosis complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.31	Maternal tuberculosis with delivery	ICD-9-CM	Diagnosis
647.32	Maternal tuberculosis with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.33	Maternal tuberculosis, antepartum	ICD-9-CM	Diagnosis
647.34	Maternal tuberculosis complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.4	Maternal malaria complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.40	Maternal malaria complicating pregnancy, childbirth or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.41	Maternal malaria with delivery	ICD-9-CM	Diagnosis
647.42	Maternal malaria with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.43	Maternal malaria, antepartum	ICD-9-CM	Diagnosis
647.44	Maternal malaria, complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
647.5	Maternal rubella complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.50	Maternal rubella complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.51	Maternal rubella with delivery	ICD-9-CM	Diagnosis
647.52	Maternal rubella with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.53	Maternal rubella, antepartum	ICD-9-CM	Diagnosis
647.54	Maternal rubella complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.6	Other maternal viral disease complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.60	Other maternal viral disease complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.61	Other maternal viral disease with delivery	ICD-9-CM	Diagnosis
647.62	Other maternal viral disease with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.63	Other maternal viral disease, antepartum	ICD-9-CM	Diagnosis
647.64	Other maternal viral diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.8	Other specified maternal infectious and parasitic disease complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.80	Other specified maternal infectious and parasitic disease complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.81	Other specified maternal infectious and parasitic disease with delivery	ICD-9-CM	Diagnosis
647.82	Other specified maternal infectious and parasitic disease with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.83	Other specified maternal infectious and parasitic disease, antepartum	ICD-9-CM	Diagnosis
647.84	Other specified maternal infectious and parasitic diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.9	Unspecified maternal infection or infestation complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.90	Unspecified maternal infection or infestation complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.91	Unspecified maternal infection or infestation with delivery	ICD-9-CM	Diagnosis
647.92	Unspecified maternal infection or infestation with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.93	Unspecified maternal infection or infestation, antepartum	ICD-9-CM	Diagnosis
647.94	Unspecified maternal infection or infestation complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648	Other current conditions in the mother classifiable elsewhere, but complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.0	Maternal diabetes mellitus complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.00	Maternal diabetes mellitus, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.01	Maternal diabetes mellitus with delivery	ICD-9-CM	Diagnosis
648.02	Maternal diabetes mellitus with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.03	Maternal diabetes mellitus, antepartum	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
648.04	Maternal diabetes mellitus, complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.1	Thyroid dysfunction complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.10	Maternal thyroid dysfunction complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
648.11	Maternal thyroid dysfunction with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
648.12	Maternal thyroid dysfunction with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.13	Maternal thyroid dysfunction, antepartum condition or complication	ICD-9-CM	Diagnosis
648.14	Maternal thyroid dysfunction complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.2	Maternal anemia complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.20	Maternal anemia of mother, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.21	Maternal anemia, with delivery	ICD-9-CM	Diagnosis
648.22	Maternal anemia with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.23	Maternal anemia, antepartum	ICD-9-CM	Diagnosis
648.24	Maternal anemia complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.3	Maternal drug dependence complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.30	Maternal drug dependence complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.31	Maternal drug dependence, with delivery	ICD-9-CM	Diagnosis
648.32	Maternal drug dependence, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.33	Maternal drug dependence, antepartum	ICD-9-CM	Diagnosis
648.34	Maternal drug dependence complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.4	Maternal mental disorders complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.40	Maternal mental disorders, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.41	Maternal mental disorders, with delivery	ICD-9-CM	Diagnosis
648.42	Maternal mental disorders, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.43	Maternal mental disorders, antepartum	ICD-9-CM	Diagnosis
648.44	Maternal mental disorders complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.5	Maternal congenital cardiovascular disorders complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.50	Maternal congenital cardiovascular disorders, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.51	Maternal congenital cardiovascular disorders, with delivery	ICD-9-CM	Diagnosis
648.52	Maternal congenital cardiovascular disorders, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.53	Maternal congenital cardiovascular disorders, antepartum	ICD-9-CM	Diagnosis
648.54	Maternal congenital cardiovascular disorders complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
648.6	Other maternal cardiovascular diseases complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.60	Other maternal cardiovascular diseases complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.61	Other maternal cardiovascular diseases, with delivery	ICD-9-CM	Diagnosis
648.62	Other maternal cardiovascular diseases, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.63	Other maternal cardiovascular diseases, antepartum	ICD-9-CM	Diagnosis
648.64	Other maternal cardiovascular diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.7	Bone and joint disorders of maternal back, pelvis, and lower limbs, complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.70	Bone and joint disorders of maternal back, pelvis, and lower limbs, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.71	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery	ICD-9-CM	Diagnosis
648.72	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.73	Bone and joint disorders of maternal back, pelvis, and lower limbs, antepartum	ICD-9-CM	Diagnosis
648.74	Bone and joint disorders of maternal back, pelvis, and lower limbs complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.8	Abnormal maternal glucose tolerance, complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.80	Abnormal maternal glucose tolerance, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.81	Abnormal maternal glucose tolerance, with delivery	ICD-9-CM	Diagnosis
648.82	Abnormal maternal glucose tolerance, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.83	Abnormal maternal glucose tolerance, antepartum	ICD-9-CM	Diagnosis
648.84	Abnormal maternal glucose tolerance complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.9	Other current maternal conditions complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.90	Other current maternal conditions classifiable elsewhere, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.91	Other current maternal conditions classifiable elsewhere, with delivery	ICD-9-CM	Diagnosis
648.92	Other current maternal conditions classifiable elsewhere, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.93	Other current maternal conditions classifiable elsewhere, antepartum	ICD-9-CM	Diagnosis
648.94	Other current maternal conditions classifiable elsewhere complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649	Other conditions or status of the mother complicating pregnancy, childbirth, or puerperium	ICD-9-CM	Diagnosis
649.0	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.00	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
649.01	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.02	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.03	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.04	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.1	Obesity complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.10	Obesity complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.11	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.12	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.13	Obesity complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.14	Obesity complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.2	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.20	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.21	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.22	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.23	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.24	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.3	Coagulation defects complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.30	Coagulation defects complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.31	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.32	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.33	Coagulation defects complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.34	Coagulation defects complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.4	Epilepsy complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.40	Epilepsy complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.41	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
649.42	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.43	Epilepsy complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.44	Epilepsy complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.5	Spotting complicating pregnancy	ICD-9-CM	Diagnosis
649.50	Spotting complicating pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.51	Spotting complicating pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.53	Spotting complicating pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
649.6	Uterine size date discrepancy	ICD-9-CM	Diagnosis
649.60	Uterine size date discrepancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.61	Uterine size date discrepancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.62	Uterine size date discrepancy, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.63	Uterine size date discrepancy, antepartum condition or complication	ICD-9-CM	Diagnosis
649.64	Uterine size date discrepancy, postpartum condition or complication	ICD-9-CM	Diagnosis
649.7	Cervical shortening	ICD-9-CM	Diagnosis
649.70	Cervical shortening, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.71	Cervical shortening, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.73	Cervical shortening, antepartum condition or complication	ICD-9-CM	Diagnosis
649.8	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section	ICD-9-CM	Diagnosis
649.81	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.82	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
650	Normal delivery	ICD-9-CM	Diagnosis
651	Multiple gestation	ICD-9-CM	Diagnosis
651.0	Twin pregnancy	ICD-9-CM	Diagnosis
651.00	Twin pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.01	Twin pregnancy, delivered	ICD-9-CM	Diagnosis
651.03	Twin pregnancy, antepartum	ICD-9-CM	Diagnosis
651.1	Triplet pregnancy	ICD-9-CM	Diagnosis
651.10	Triplet pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.11	Triplet pregnancy, delivered	ICD-9-CM	Diagnosis
651.13	Triplet pregnancy, antepartum	ICD-9-CM	Diagnosis
651.2	Quadruplet pregnancy	ICD-9-CM	Diagnosis
651.20	Quadruplet pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.21	Quadruplet pregnancy, delivered	ICD-9-CM	Diagnosis
651.23	Quadruplet pregnancy, antepartum	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
651.3	Twin pregnancy with fetal loss and retention of one fetus	ICD-9-CM	Diagnosis
651.30	Twin pregnancy with fetal loss and retention of one fetus, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.31	Twin pregnancy with fetal loss and retention of one fetus, delivered	ICD-9-CM	Diagnosis
651.33	Twin pregnancy with fetal loss and retention of one fetus, antepartum	ICD-9-CM	Diagnosis
651.4	Triplet pregnancy with fetal loss and retention of one or more	ICD-9-CM	Diagnosis
651.40	Triplet pregnancy with fetal loss and retention of one or more, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.41	Triplet pregnancy with fetal loss and retention of one or more, delivered	ICD-9-CM	Diagnosis
651.43	Triplet pregnancy with fetal loss and retention of one or more, antepartum	ICD-9-CM	Diagnosis
651.5	Quadruplet pregnancy with fetal loss and retention of one or more	ICD-9-CM	Diagnosis
651.50	Quadruplet pregnancy with fetal loss and retention of one or more, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.51	Quadruplet pregnancy with fetal loss and retention of one or more, delivered	ICD-9-CM	Diagnosis
651.53	Quadruplet pregnancy with fetal loss and retention of one or more, antepartum	ICD-9-CM	Diagnosis
651.6	Other multiple pregnancy with fetal loss and retention of one or more fetus(es)	ICD-9-CM	Diagnosis
651.60	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.61	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), delivered	ICD-9-CM	Diagnosis
651.63	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), antepartum	ICD-9-CM	Diagnosis
651.7	Multiple gestation following (elective) fetal reduction	ICD-9-CM	Diagnosis
651.70	Multiple gestation following (elective) fetal reduction, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.71	Multiple gestation following (elective) fetal reduction, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
651.73	Multiple gestation following (elective) fetal reduction, antepartum condition or complication	ICD-9-CM	Diagnosis
651.8	Other specified multiple gestation	ICD-9-CM	Diagnosis
651.80	Other specified multiple gestation, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.81	Other specified multiple gestation, delivered	ICD-9-CM	Diagnosis
651.83	Other specified multiple gestation, antepartum	ICD-9-CM	Diagnosis
651.9	Unspecified multiple gestation	ICD-9-CM	Diagnosis
651.90	Unspecified multiple gestation, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.91	Unspecified multiple gestation, delivered	ICD-9-CM	Diagnosis
651.93	Unspecified multiple gestation, antepartum	ICD-9-CM	Diagnosis
652	Malposition and malpresentation of fetus	ICD-9-CM	Diagnosis
652.0	Unstable lie of fetus	ICD-9-CM	Diagnosis
652.00	Unstable lie of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.01	Unstable lie of fetus, delivered	ICD-9-CM	Diagnosis
652.03	Unstable lie of fetus, antepartum	ICD-9-CM	Diagnosis
652.1	Breech or other malpresentation successfully converted to cephalic presentation	ICD-9-CM	Diagnosis
652.10	Breech or other malpresentation successfully converted to cephalic presentation, unspecified as to episode of care	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
652.11	Breech or other malpresentation successfully converted to cephalic presentation, delivered	ICD-9-CM	Diagnosis
652.13	Breech or other malpresentation successfully converted to cephalic presentation, antepartum	ICD-9-CM	Diagnosis
652.2	Breech presentation without mention of version	ICD-9-CM	Diagnosis
652.20	Breech presentation without mention of version, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.21	Breech presentation without mention of version, delivered	ICD-9-CM	Diagnosis
652.23	Breech presentation without mention of version, antepartum	ICD-9-CM	Diagnosis
652.3	Transverse or oblique presentation of fetus	ICD-9-CM	Diagnosis
652.30	Transverse or oblique fetal presentation, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.31	Transverse or oblique fetal presentation, delivered	ICD-9-CM	Diagnosis
652.33	Transverse or oblique fetal presentation, antepartum	ICD-9-CM	Diagnosis
652.4	Fetal face or brow presentation of fetus	ICD-9-CM	Diagnosis
652.40	Fetal face or brow presentation, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.41	Fetal face or brow presentation, delivered	ICD-9-CM	Diagnosis
652.43	Fetal face or brow presentation, antepartum	ICD-9-CM	Diagnosis
652.5	High fetal head at term	ICD-9-CM	Diagnosis
652.50	High fetal head at term, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.51	High fetal head at term, delivered	ICD-9-CM	Diagnosis
652.53	High fetal head at term, antepartum	ICD-9-CM	Diagnosis
652.6	Multiple gestation with malpresentation of one fetus or more	ICD-9-CM	Diagnosis
652.60	Multiple gestation with malpresentation of one fetus or more, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.61	Multiple gestation with malpresentation of one fetus or more, delivered	ICD-9-CM	Diagnosis
652.63	Multiple gestation with malpresentation of one fetus or more, antepartum	ICD-9-CM	Diagnosis
652.7	Prolapsed arm of fetus	ICD-9-CM	Diagnosis
652.70	Prolapsed arm of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.71	Prolapsed arm of fetus, delivered	ICD-9-CM	Diagnosis
652.73	Prolapsed arm of fetus, antepartum condition or complication	ICD-9-CM	Diagnosis
652.8	Other specified malposition or malpresentation of fetus	ICD-9-CM	Diagnosis
652.80	Other specified malposition or malpresentation of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.81	Other specified malposition or malpresentation of fetus, delivered	ICD-9-CM	Diagnosis
652.83	Other specified malposition or malpresentation of fetus, antepartum	ICD-9-CM	Diagnosis
652.9	Unspecified malposition or malpresentation of fetus	ICD-9-CM	Diagnosis
652.90	Unspecified malposition or malpresentation of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.91	Unspecified malposition or malpresentation of fetus, delivered	ICD-9-CM	Diagnosis
652.93	Unspecified malposition or malpresentation of fetus, antepartum	ICD-9-CM	Diagnosis
653	Disproportion in pregnancy, labor, and delivery	ICD-9-CM	Diagnosis
653.0	Major abnormality of bony pelvis, not further specified, in pregnancy	ICD-9-CM	Diagnosis
653.00	Major abnormality of bony pelvis, not further specified in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.01	Major abnormality of bony pelvis, not further specified, delivered	ICD-9-CM	Diagnosis
653.03	Major abnormality of bony pelvis, not further specified, antepartum	ICD-9-CM	Diagnosis
653.1	Generally contracted pelvis in pregnancy	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
653.10	Generally contracted pelvis in pregnancy, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
653.11	Generally contracted pelvis in pregnancy, delivered	ICD-9-CM	Diagnosis
653.13	Generally contracted pelvis in pregnancy, antepartum	ICD-9-CM	Diagnosis
653.2	Inlet contraction of pelvis in pregnancy	ICD-9-CM	Diagnosis
653.20	Inlet contraction of pelvis in pregnancy, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
653.21	Inlet contraction of pelvis in pregnancy, delivered	ICD-9-CM	Diagnosis
653.23	Inlet contraction of pelvis in pregnancy, antepartum	ICD-9-CM	Diagnosis
653.3	Outlet contraction of pelvis in pregnancy	ICD-9-CM	Diagnosis
653.30	Outlet contraction of pelvis in pregnancy, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
653.31	Outlet contraction of pelvis in pregnancy, delivered	ICD-9-CM	Diagnosis
653.33	Outlet contraction of pelvis in pregnancy, antepartum	ICD-9-CM	Diagnosis
653.4	Fetopelvic disproportion	ICD-9-CM	Diagnosis
653.40	Fetopelvic disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.41	Fetopelvic disproportion, delivered	ICD-9-CM	Diagnosis
653.43	Fetopelvic disproportion, antepartum	ICD-9-CM	Diagnosis
653.5	Unusually large fetus causing disproportion	ICD-9-CM	Diagnosis
653.50	Unusually large fetus causing disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.51	Unusually large fetus causing disproportion, delivered	ICD-9-CM	Diagnosis
653.53	Unusually large fetus causing disproportion, antepartum	ICD-9-CM	Diagnosis
653.6	Hydrocephalic fetus causing disproportion	ICD-9-CM	Diagnosis
653.60	Hydrocephalic fetus causing disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.61	Hydrocephalic fetus causing disproportion, delivered	ICD-9-CM	Diagnosis
653.63	Hydrocephalic fetus causing disproportion, antepartum	ICD-9-CM	Diagnosis
653.7	Other fetal abnormality causing disproportion	ICD-9-CM	Diagnosis
653.70	Other fetal abnormality causing disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.71	Other fetal abnormality causing disproportion, delivered	ICD-9-CM	Diagnosis
653.73	Other fetal abnormality causing disproportion, antepartum	ICD-9-CM	Diagnosis
653.8	Fetal disproportion of other origin	ICD-9-CM	Diagnosis
653.80	Fetal disproportion of other origin, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.81	Fetal disproportion of other origin, delivered	ICD-9-CM	Diagnosis
653.83	Fetal disproportion of other origin, antepartum	ICD-9-CM	Diagnosis
653.9	Unspecified fetal disproportion	ICD-9-CM	Diagnosis
653.90	Unspecified fetal disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.91	Unspecified fetal disproportion, delivered	ICD-9-CM	Diagnosis
653.93	Unspecified fetal disproportion, antepartum	ICD-9-CM	Diagnosis
654	Abnormality of organs and soft tissues of pelvis complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.0	Congenital abnormalities of pregnant uterus complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.00	Congenital abnormalities of pregnant uterus, unspecified as to episode of care	ICD-9-CM	Diagnosis
654.01	Congenital abnormalities of pregnant uterus, delivered	ICD-9-CM	Diagnosis
654.02	Congenital abnormalities of pregnant uterus, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
654.03	Congenital abnormalities of pregnant uterus, antepartum	ICD-9-CM	Diagnosis
654.04	Congenital abnormalities of uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
654.1	Tumors of body of pregnant uterus	ICD-9-CM	Diagnosis
654.10	Tumors of body of pregnant uterus, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.11	Tumors of body of uterus, delivered	ICD-9-CM	Diagnosis
654.12	Tumors of body of uterus, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.13	Tumors of body of uterus, antepartum condition or complication	ICD-9-CM	Diagnosis
654.14	Tumors of body of uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
654.2	Previous cesarean section complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.20	Previous cesarean delivery, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
654.21	Previous cesarean delivery, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
654.23	Previous cesarean delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
654.3	Retroverted and incarcerated gravid uterus	ICD-9-CM	Diagnosis
654.30	Retroverted and incarcerated gravid uterus, unspecified as to episode of care	ICD-9-CM	Diagnosis
654.31	Retroverted and incarcerated gravid uterus, delivered	ICD-9-CM	Diagnosis
654.32	Retroverted and incarcerated gravid uterus, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.33	Retroverted and incarcerated gravid uterus, antepartum	ICD-9-CM	Diagnosis
654.34	Retroverted and incarcerated gravid uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
654.4	Other abnormalities in shape or position of gravid uterus and of neighboring structures	ICD-9-CM	Diagnosis
654.40	Other abnormalities in shape or position of gravid uterus and of neighboring structures, unspecified as to episode of care	ICD-9-CM	Diagnosis
654.41	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered	ICD-9-CM	Diagnosis
654.42	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.43	Other abnormalities in shape or position of gravid uterus and of neighboring structures, antepartum	ICD-9-CM	Diagnosis
654.44	Other abnormalities in shape or position of gravid uterus and of neighboring structures, postpartum condition or complication	ICD-9-CM	Diagnosis
654.5	Cervical incompetence complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.50	Cervical incompetence, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.51	Cervical incompetence, delivered	ICD-9-CM	Diagnosis
654.52	Cervical incompetence, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.53	Cervical incompetence, antepartum condition or complication	ICD-9-CM	Diagnosis
654.54	Cervical incompetence, postpartum condition or complication	ICD-9-CM	Diagnosis
654.6	Other congenital or acquired abnormality of cervix complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.60	Other congenital or acquired abnormality of cervix, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.61	Other congenital or acquired abnormality of cervix, with delivery	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
654.62	Other congenital or acquired abnormality of cervix, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.63	Other congenital or acquired abnormality of cervix, antepartum condition or complication	ICD-9-CM	Diagnosis
654.64	Other congenital or acquired abnormality of cervix, postpartum condition or complication	ICD-9-CM	Diagnosis
654.7	Congenital or acquired abnormality of vagina complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.70	Congenital or acquired abnormality of vagina, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.71	Congenital or acquired abnormality of vagina, with delivery	ICD-9-CM	Diagnosis
654.72	Congenital or acquired abnormality of vagina, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.73	Congenital or acquired abnormality of vagina, antepartum condition or complication	ICD-9-CM	Diagnosis
654.74	Congenital or acquired abnormality of vagina, postpartum condition or complication	ICD-9-CM	Diagnosis
654.8	Congenital or acquired abnormality of vulva complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.80	Congenital or acquired abnormality of vulva, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.81	Congenital or acquired abnormality of vulva, with delivery	ICD-9-CM	Diagnosis
654.82	Congenital or acquired abnormality of vulva, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.83	Congenital or acquired abnormality of vulva, antepartum condition or complication	ICD-9-CM	Diagnosis
654.84	Congenital or acquired abnormality of vulva, postpartum condition or complication	ICD-9-CM	Diagnosis
654.9	Other and unspecified abnormality of organs and soft tissues of pelvis complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
654.90	Other and unspecified abnormality of organs and soft tissues of pelvis, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.91	Other and unspecified abnormality of organs and soft tissues of pelvis, with delivery	ICD-9-CM	Diagnosis
654.92	Other and unspecified abnormality of organs and soft tissues of pelvis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.93	Other and unspecified abnormality of organs and soft tissues of pelvis, antepartum condition or complication	ICD-9-CM	Diagnosis
654.94	Other and unspecified abnormality of organs and soft tissues of pelvis, postpartum condition or complication	ICD-9-CM	Diagnosis
655	Known or suspected fetal abnormality affecting management of mother	ICD-9-CM	Diagnosis
655.0	Central nervous system malformation in fetus affecting management of mother	ICD-9-CM	Diagnosis
655.00	Central nervous system malformation in fetus, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.01	Central nervous system malformation in fetus, with delivery	ICD-9-CM	Diagnosis
655.03	Central nervous system malformation in fetus, antepartum	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
655.1	Chromosomal abnormality in fetus affecting management of mother	ICD-9-CM	Diagnosis
655.10	Chromosomal abnormality in fetus, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.11	Chromosomal abnormality in fetus, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.13	Chromosomal abnormality in fetus, affecting management of mother, antepartum	ICD-9-CM	Diagnosis
655.2	Hereditary disease in family possibly affecting fetus, affecting management of mother	ICD-9-CM	Diagnosis
655.20	Hereditary disease in family possibly affecting fetus, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.21	Hereditary disease in family possibly affecting fetus, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.23	Hereditary disease in family possibly affecting fetus, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.3	Suspected damage to fetus from viral disease in mother, affecting management of mother	ICD-9-CM	Diagnosis
655.30	Suspected damage to fetus from viral disease in mother, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.31	Suspected damage to fetus from viral disease in mother, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.33	Suspected damage to fetus from viral disease in mother, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.4	Suspected damage to fetus from other disease in mother, affecting management of mother	ICD-9-CM	Diagnosis
655.40	Suspected damage to fetus from other disease in mother, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.41	Suspected damage to fetus from other disease in mother, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.43	Suspected damage to fetus from other disease in mother, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.5	Suspected damage to fetus from drugs, affecting management of mother	ICD-9-CM	Diagnosis
655.50	Suspected damage to fetus from drugs, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.51	Suspected damage to fetus from drugs, affecting management of mother, delivered	ICD-9-CM	Diagnosis
655.53	Suspected damage to fetus from drugs, affecting management of mother, antepartum	ICD-9-CM	Diagnosis
655.6	Suspected damage to fetus from radiation, affecting management of mother	ICD-9-CM	Diagnosis
655.60	Suspected damage to fetus from radiation, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.61	Suspected damage to fetus from radiation, affecting management of mother, delivered	ICD-9-CM	Diagnosis
655.63	Suspected damage to fetus from radiation, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.7	Decreased fetal movements	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
655.70	Decreased fetal movements, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.71	Decreased fetal movements, affecting management of mother, delivered	ICD-9-CM	Diagnosis
655.73	Decreased fetal movements, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.8	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother	ICD-9-CM	Diagnosis
655.80	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.81	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, delivery	ICD-9-CM	Diagnosis
655.83	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.9	Unspecified fetal abnormality affecting management of mother	ICD-9-CM	Diagnosis
655.90	Unspecified fetal abnormality affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.91	Unspecified fetal abnormality affecting management of mother, delivery	ICD-9-CM	Diagnosis
655.93	Unspecified fetal abnormality affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
656	Other known or suspected fetal and placental problems affecting management of mother	ICD-9-CM	Diagnosis
656.0	Fetal-maternal hemorrhage affecting management of mother	ICD-9-CM	Diagnosis
656.00	Fetal-maternal hemorrhage, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
656.01	Fetal-maternal hemorrhage, with delivery	ICD-9-CM	Diagnosis
656.03	Fetal-maternal hemorrhage, antepartum condition or complication	ICD-9-CM	Diagnosis
656.1	Rhesus isoimmunization affecting management of mother	ICD-9-CM	Diagnosis
656.10	Rhesus isoimmunization unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
656.11	Rhesus isoimmunization affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.13	Rhesus isoimmunization affecting management of mother, antepartum condition	ICD-9-CM	Diagnosis
656.2	Isoimmunization from other and unspecified blood-group incompatibility affecting management of mother	ICD-9-CM	Diagnosis
656.20	Isoimmunization from other and unspecified blood-group incompatibility, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
656.21	Isoimmunization from other and unspecified blood-group incompatibility, affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.23	Isoimmunization from other and unspecified blood-group incompatibility, affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.3	Fetal distress affecting management of mother	ICD-9-CM	Diagnosis
656.30	Fetal distress affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.31	Fetal distress affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.33	Fetal distress affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.4	Intrauterine death affecting management of mother	ICD-9-CM	Diagnosis
656.40	Intrauterine death affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.41	Intrauterine death affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.43	Intrauterine death affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.5	Poor fetal growth affecting management of mother	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
656.50	Poor fetal growth, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.51	Poor fetal growth, affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.53	Poor fetal growth, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
656.6	Excessive fetal growth affecting management of mother	ICD-9-CM	Diagnosis
656.60	Excessive fetal growth affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.61	Excessive fetal growth affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.63	Excessive fetal growth affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.7	Other placental conditions affecting management of mother	ICD-9-CM	Diagnosis
656.70	Other placental conditions affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.71	Other placental conditions affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.73	Other placental conditions affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.8	Other specified fetal and placental problems affecting management of mother	ICD-9-CM	Diagnosis
656.80	Other specified fetal and placental problems affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.81	Other specified fetal and placental problems affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.83	Other specified fetal and placental problems affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.9	Unspecified fetal and placental problem affecting management of mother	ICD-9-CM	Diagnosis
656.90	Unspecified fetal and placental problem affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.91	Unspecified fetal and placental problem affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.93	Unspecified fetal and placental problem affecting management of mother, antepartum	ICD-9-CM	Diagnosis
657	Polyhydramnios	ICD-9-CM	Diagnosis
657.0	Polyhydramnios	ICD-9-CM	Diagnosis
657.00	Polyhydramnios, unspecified as to episode of care	ICD-9-CM	Diagnosis
657.01	Polyhydramnios, with delivery	ICD-9-CM	Diagnosis
657.03	Polyhydramnios, antepartum complication	ICD-9-CM	Diagnosis
658	Other problems associated with amniotic cavity and membranes	ICD-9-CM	Diagnosis
658.0	Oligohydramnios	ICD-9-CM	Diagnosis
658.00	Oligohydramnios, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.01	Oligohydramnios, delivered	ICD-9-CM	Diagnosis
658.03	Oligohydramnios, antepartum	ICD-9-CM	Diagnosis
658.1	Premature rupture of membranes in pregnancy	ICD-9-CM	Diagnosis
658.10	Premature rupture of membranes in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.11	Premature rupture of membranes in pregnancy, delivered	ICD-9-CM	Diagnosis
658.13	Premature rupture of membranes in pregnancy, antepartum	ICD-9-CM	Diagnosis
658.2	Delayed delivery after spontaneous or unspecified rupture of membranes	ICD-9-CM	Diagnosis
658.20	Delayed delivery after spontaneous or unspecified rupture of membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
658.21	Delayed delivery after spontaneous or unspecified rupture of membranes, delivered	ICD-9-CM	Diagnosis
658.23	Delayed delivery after spontaneous or unspecified rupture of membranes, antepartum	ICD-9-CM	Diagnosis
658.3	Delayed delivery after artificial rupture of membranes	ICD-9-CM	Diagnosis
658.30	Delayed delivery after artificial rupture of membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.31	Delayed delivery after artificial rupture of membranes, delivered	ICD-9-CM	Diagnosis
658.33	Delayed delivery after artificial rupture of membranes, antepartum	ICD-9-CM	Diagnosis
658.4	Infection of amniotic cavity	ICD-9-CM	Diagnosis
658.40	Infection of amniotic cavity, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.41	Infection of amniotic cavity, delivered	ICD-9-CM	Diagnosis
658.43	Infection of amniotic cavity, antepartum	ICD-9-CM	Diagnosis
658.8	Other problems associated with amniotic cavity and membranes	ICD-9-CM	Diagnosis
658.80	Other problem associated with amniotic cavity and membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.81	Other problem associated with amniotic cavity and membranes, delivered	ICD-9-CM	Diagnosis
658.83	Other problem associated with amniotic cavity and membranes, antepartum	ICD-9-CM	Diagnosis
658.9	Unspecified problem associated with amniotic cavity and membranes	ICD-9-CM	Diagnosis
658.90	Unspecified problem associated with amniotic cavity and membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.91	Unspecified problem associated with amniotic cavity and membranes, delivered	ICD-9-CM	Diagnosis
658.93	Unspecified problem associated with amniotic cavity and membranes, antepartum	ICD-9-CM	Diagnosis
659	Other indications for care or intervention related to labor and delivery, not elsewhere classified	ICD-9-CM	Diagnosis
659.0	Failed mechanical induction of labor	ICD-9-CM	Diagnosis
659.00	Failed mechanical induction of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.01	Failed mechanical induction of labor, delivered	ICD-9-CM	Diagnosis
659.03	Failed mechanical induction of labor, antepartum	ICD-9-CM	Diagnosis
659.1	Failed medical or unspecified induction of labor	ICD-9-CM	Diagnosis
659.10	Failed medical or unspecified induction of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.11	Failed medical or unspecified induction of labor, delivered	ICD-9-CM	Diagnosis
659.13	Failed medical or unspecified induction of labor, antepartum	ICD-9-CM	Diagnosis
659.2	Maternal pyrexia during labor, unspecified	ICD-9-CM	Diagnosis
659.20	Unspecified maternal pyrexia during labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.21	Unspecified maternal pyrexia during labor, delivered	ICD-9-CM	Diagnosis
659.23	Unspecified maternal pyrexia, antepartum	ICD-9-CM	Diagnosis
659.3	Generalized infection during labor	ICD-9-CM	Diagnosis
659.30	Generalized infection during labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.31	Generalized infection during labor, delivered	ICD-9-CM	Diagnosis
659.33	Generalized infection during labor, antepartum	ICD-9-CM	Diagnosis
659.4	Grand multiparity, with current pregnancy	ICD-9-CM	Diagnosis
659.40	Grand multiparity with current pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.41	Grand multiparity, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
659.43	Grand multiparity with current pregnancy, antepartum	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
659.5	Elderly primigravida	ICD-9-CM	Diagnosis
659.50	Elderly primigravida, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.51	Elderly primigravida, delivered	ICD-9-CM	Diagnosis
659.53	Elderly primigravida, antepartum	ICD-9-CM	Diagnosis
659.6	Elderly multigravida	ICD-9-CM	Diagnosis
659.60	Elderly multigravida, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
659.61	Elderly multigravida, delivered, with mention of antepartum condition	ICD-9-CM	Diagnosis
659.63	Elderly multigravida, with antepartum condition or complication	ICD-9-CM	Diagnosis
659.7	Abnormality in fetal heart rate or rhythm	ICD-9-CM	Diagnosis
659.70	Abnormality in fetal heart rate or rhythm, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
659.71	Abnormality in fetal heart rate or rhythm, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
659.73	Abnormality in fetal heart rate or rhythm, antepartum condition or complication	ICD-9-CM	Diagnosis
659.8	Other specified indications for care or intervention related to labor and delivery	ICD-9-CM	Diagnosis
659.80	Other specified indication for care or intervention related to labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.81	Other specified indication for care or intervention related to labor and delivery, delivered	ICD-9-CM	Diagnosis
659.83	Other specified indication for care or intervention related to labor and delivery, antepartum	ICD-9-CM	Diagnosis
659.9	Unspecified indication for care or intervention related to labor and delivery	ICD-9-CM	Diagnosis
659.90	Unspecified indication for care or intervention related to labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.91	Unspecified indication for care or intervention related to labor and delivery, delivered	ICD-9-CM	Diagnosis
659.93	Unspecified indication for care or intervention related to labor and delivery, antepartum	ICD-9-CM	Diagnosis
660	Obstructed labor	ICD-9-CM	Diagnosis
660.0	Obstruction caused by malposition of fetus at onset of labor	ICD-9-CM	Diagnosis
660.00	Obstruction caused by malposition of fetus at onset of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.01	Obstruction caused by malposition of fetus at onset of labor, delivered	ICD-9-CM	Diagnosis
660.03	Obstruction caused by malposition of fetus at onset of labor, antepartum	ICD-9-CM	Diagnosis
660.1	Obstruction by bony pelvis during labor and delivery	ICD-9-CM	Diagnosis
660.10	Obstruction by bony pelvis during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.11	Obstruction by bony pelvis during labor and delivery, delivered	ICD-9-CM	Diagnosis
660.13	Obstruction by bony pelvis during labor and delivery, antepartum	ICD-9-CM	Diagnosis
660.2	Obstruction by abnormal pelvic soft tissues during labor and delivery	ICD-9-CM	Diagnosis
660.20	Obstruction by abnormal pelvic soft tissues during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.21	Obstruction by abnormal pelvic soft tissues during labor and delivery, delivered	ICD-9-CM	Diagnosis
660.23	Obstruction by abnormal pelvic soft tissues during labor and delivery, antepartum	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
660.3	Deep transverse arrest and persistent occipitoposterior position during labor and delivery	ICD-9-CM	Diagnosis
660.30	Deep transverse arrest and persistent occipitoposterior position during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.31	Deep transverse arrest and persistent occipitoposterior position during labor and deliver, delivered	ICD-9-CM	Diagnosis
660.33	Deep transverse arrest and persistent occipitoposterior position during labor and delivery, antepartum	ICD-9-CM	Diagnosis
660.4	Shoulder (girdle) dystocia during labor and delivery	ICD-9-CM	Diagnosis
660.40	Shoulder (girdle) dystocia during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.41	Shoulder (girdle) dystocia during labor and deliver, delivered	ICD-9-CM	Diagnosis
660.43	Shoulder (girdle) dystocia during labor and delivery, antepartum	ICD-9-CM	Diagnosis
660.5	Locked twins	ICD-9-CM	Diagnosis
660.50	Locked twins during labor and delivery, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
660.51	Locked twins, delivered	ICD-9-CM	Diagnosis
660.53	Locked twins, antepartum	ICD-9-CM	Diagnosis
660.6	Unspecified failed trial of labor	ICD-9-CM	Diagnosis
660.60	Unspecified failed trial of labor, unspecified as to episode	ICD-9-CM	Diagnosis
660.61	Unspecified failed trial of labor, delivered	ICD-9-CM	Diagnosis
660.63	Unspecified failed trial of labor, antepartum	ICD-9-CM	Diagnosis
660.7	Unspecified failed forceps or vacuum extractor	ICD-9-CM	Diagnosis
660.70	Unspecified failed forceps or vacuum extractor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.71	Unspecified failed forceps or vacuum extractor, delivered	ICD-9-CM	Diagnosis
660.73	Failed forceps or vacuum extractor, unspecified, antepartum	ICD-9-CM	Diagnosis
660.8	Other causes of obstructed labor	ICD-9-CM	Diagnosis
660.80	Other causes of obstructed labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.81	Other causes of obstructed labor, delivered	ICD-9-CM	Diagnosis
660.83	Other causes of obstructed labor, antepartum	ICD-9-CM	Diagnosis
660.9	Unspecified obstructed labor	ICD-9-CM	Diagnosis
660.90	Unspecified obstructed labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.91	Unspecified obstructed labor, with delivery	ICD-9-CM	Diagnosis
660.93	Unspecified obstructed labor, antepartum	ICD-9-CM	Diagnosis
661	Abnormality of forces of labor	ICD-9-CM	Diagnosis
661.0	Primary uterine inertia	ICD-9-CM	Diagnosis
661.00	Primary uterine inertia, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.01	Primary uterine inertia, with delivery	ICD-9-CM	Diagnosis
661.03	Primary uterine inertia, antepartum	ICD-9-CM	Diagnosis
661.1	Secondary uterine inertia	ICD-9-CM	Diagnosis
661.10	Secondary uterine inertia, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.11	Secondary uterine inertia, with delivery	ICD-9-CM	Diagnosis
661.13	Secondary uterine inertia, antepartum	ICD-9-CM	Diagnosis
661.2	Other and unspecified uterine inertia	ICD-9-CM	Diagnosis
661.20	Other and unspecified uterine inertia, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.21	Other and unspecified uterine inertia, with delivery	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
661.23	Other and unspecified uterine inertia, antepartum	ICD-9-CM	Diagnosis
661.3	Precipitate labor	ICD-9-CM	Diagnosis
661.30	Precipitate labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.31	Precipitate labor, with delivery	ICD-9-CM	Diagnosis
661.33	Precipitate labor, antepartum	ICD-9-CM	Diagnosis
661.4	Hypertonic, incoordinate, or prolonged uterine contractions	ICD-9-CM	Diagnosis
661.40	Hypertonic, incoordinate, or prolonged uterine contractions, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.41	Hypertonic, incoordinate, or prolonged uterine contractions, with delivery	ICD-9-CM	Diagnosis
661.43	Hypertonic, incoordinate, or prolonged uterine contractions, antepartum	ICD-9-CM	Diagnosis
661.9	Unspecified abnormality of labor	ICD-9-CM	Diagnosis
661.90	Unspecified abnormality of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.91	Unspecified abnormality of labor, with delivery	ICD-9-CM	Diagnosis
661.93	Unspecified abnormality of labor, antepartum	ICD-9-CM	Diagnosis
662	Long labor	ICD-9-CM	Diagnosis
662.0	Prolonged first stage of labor	ICD-9-CM	Diagnosis
662.00	Prolonged first stage of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
662.01	Prolonged first stage of labor, delivered	ICD-9-CM	Diagnosis
662.03	Prolonged first stage of labor, antepartum	ICD-9-CM	Diagnosis
662.1	Unspecified prolonged labor	ICD-9-CM	Diagnosis
662.10	Unspecified prolonged labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
662.11	Unspecified prolonged labor, delivered	ICD-9-CM	Diagnosis
662.13	Unspecified prolonged labor, antepartum	ICD-9-CM	Diagnosis
662.2	Prolonged second stage of labor	ICD-9-CM	Diagnosis
662.20	Prolonged second stage of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
662.21	Prolonged second stage of labor, delivered	ICD-9-CM	Diagnosis
662.23	Prolonged second stage of labor, antepartum	ICD-9-CM	Diagnosis
662.3	Delayed delivery of second twin, triplet, etc.	ICD-9-CM	Diagnosis
662.30	Delayed delivery of second twin, triplet, etc., unspecified as to episode of care	ICD-9-CM	Diagnosis
662.31	Delayed delivery of second twin, triplet, etc., delivered	ICD-9-CM	Diagnosis
662.33	Delayed delivery of second twin, triplet, etc., antepartum	ICD-9-CM	Diagnosis
663	Umbilical cord complications during labor and delivery	ICD-9-CM	Diagnosis
663.0	Prolapse of cord, complicating labor and delivery	ICD-9-CM	Diagnosis
663.00	Prolapse of cord, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.01	Prolapse of cord, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.03	Prolapse of cord, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.1	Cord around neck, with compression, complicating labor and delivery	ICD-9-CM	Diagnosis
663.10	Cord around neck, with compression, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.11	Cord around neck, with compression, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.13	Cord around neck, with compression, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.2	Other and unspecified cord entanglement, with compression, complicating labor and delivery	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
663.20	Other and unspecified cord entanglement, with compression, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.21	Other and unspecified cord entanglement, with compression, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.23	Other and unspecified cord entanglement, with compression, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.3	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery	ICD-9-CM	Diagnosis
663.30	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.31	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.33	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.4	Short cord complicating labor and delivery	ICD-9-CM	Diagnosis
663.40	Short cord complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.41	Short cord complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.43	Short cord complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.5	Vasa previa complicating labor and delivery	ICD-9-CM	Diagnosis
663.50	Vasa previa complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.51	Vasa previa complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.53	Vasa previa complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.6	Vascular lesions of cord complicating labor and delivery	ICD-9-CM	Diagnosis
663.60	Vascular lesions of cord complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.61	Vascular lesions of cord complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.63	Vascular lesions of cord complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.8	Other umbilical cord complications during labor and delivery	ICD-9-CM	Diagnosis
663.80	Other umbilical cord complications during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.81	Other umbilical cord complications during labor and delivery, delivered	ICD-9-CM	Diagnosis
663.83	Other umbilical cord complications during labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.9	Unspecified umbilical cord complication during labor and delivery	ICD-9-CM	Diagnosis
663.90	Unspecified umbilical cord complication during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.91	Unspecified umbilical cord complication during labor and delivery, delivered	ICD-9-CM	Diagnosis
663.93	Unspecified umbilical cord complication during labor and delivery, antepartum	ICD-9-CM	Diagnosis
664	Trauma to perineum and vulva during delivery	ICD-9-CM	Diagnosis
664.0	First-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.00	First-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.01	First-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.04	First-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.1	Second-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.10	Second-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.11	Second-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.14	Second-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
664.2	Third-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.20	Third-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.21	Third-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.24	Third-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.3	Fourth-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.30	Fourth-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.31	Fourth-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.34	Fourth-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.4	Unspecified perineal laceration during delivery	ICD-9-CM	Diagnosis
664.40	Unspecified perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.41	Unspecified perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.44	Unspecified perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.5	Vulvar and perineal hematoma during delivery	ICD-9-CM	Diagnosis
664.50	Vulvar and perineal hematoma, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.51	Vulvar and perineal hematoma, with delivery	ICD-9-CM	Diagnosis
664.54	Vulvar and perineal hematoma, postpartum condition or complication	ICD-9-CM	Diagnosis
664.6	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration	ICD-9-CM	Diagnosis
664.60	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
664.61	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
664.64	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.8	Other specified trauma to perineum and vulva during delivery	ICD-9-CM	Diagnosis
664.80	Other specified trauma to perineum and vulva, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.81	Other specified trauma to perineum and vulva, with delivery	ICD-9-CM	Diagnosis
664.84	Other specified trauma to perineum and vulva, postpartum condition or complication	ICD-9-CM	Diagnosis
664.9	Unspecified trauma to perineum and vulva during delivery	ICD-9-CM	Diagnosis
664.90	Unspecified trauma to perineum and vulva, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.91	Unspecified trauma to perineum and vulva, with delivery	ICD-9-CM	Diagnosis
664.94	Unspecified trauma to perineum and vulva, postpartum condition or complication	ICD-9-CM	Diagnosis
665	Other obstetrical trauma	ICD-9-CM	Diagnosis
665.0	Rupture of uterus before onset of labor	ICD-9-CM	Diagnosis
665.00	Rupture of uterus before onset of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.01	Rupture of uterus before onset of labor, with delivery	ICD-9-CM	Diagnosis
665.03	Rupture of uterus before onset of labor, antepartum	ICD-9-CM	Diagnosis
665.1	Rupture of uterus during and after labor	ICD-9-CM	Diagnosis
665.10	Rupture of uterus during labor, unspecified as to episode	ICD-9-CM	Diagnosis
665.11	Rupture of uterus during labor, with delivery	ICD-9-CM	Diagnosis
665.2	Obstetrical inversion of uterus	ICD-9-CM	Diagnosis
665.20	Inversion of uterus, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
665.22	Inversion of uterus, delivered with postpartum complication	ICD-9-CM	Diagnosis
665.24	Inversion of uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
665.3	Obstetrical laceration of cervix	ICD-9-CM	Diagnosis
665.30	Laceration of cervix, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.31	Laceration of cervix, with delivery	ICD-9-CM	Diagnosis
665.34	Laceration of cervix, postpartum condition or complication	ICD-9-CM	Diagnosis
665.4	High vaginal laceration during and after labor	ICD-9-CM	Diagnosis
665.40	High vaginal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.41	High vaginal laceration, with delivery	ICD-9-CM	Diagnosis
665.44	High vaginal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
665.5	Other obstetrical injury to pelvic organs	ICD-9-CM	Diagnosis
665.50	Other injury to pelvic organs, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.51	Other injury to pelvic organs, with delivery	ICD-9-CM	Diagnosis
665.54	Other injury to pelvic organs, postpartum condition or complication	ICD-9-CM	Diagnosis
665.6	Obstetrical damage to pelvic joints and ligaments	ICD-9-CM	Diagnosis
665.60	Damage to pelvic joints and ligaments, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.61	Damage to pelvic joints and ligaments, with delivery	ICD-9-CM	Diagnosis
665.64	Damage to pelvic joints and ligaments, postpartum condition or complication	ICD-9-CM	Diagnosis
665.7	Obstetrical pelvic hematoma	ICD-9-CM	Diagnosis
665.70	Pelvic hematoma, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.71	Pelvic hematoma, with delivery	ICD-9-CM	Diagnosis
665.72	Pelvic hematoma, delivered with postpartum complication	ICD-9-CM	Diagnosis
665.74	Pelvic hematoma, postpartum condition or complication	ICD-9-CM	Diagnosis
665.8	Other specified obstetrical trauma	ICD-9-CM	Diagnosis
665.80	Other specified obstetrical trauma, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.81	Other specified obstetrical trauma, with delivery	ICD-9-CM	Diagnosis
665.82	Other specified obstetrical trauma, delivered, with postpartum	ICD-9-CM	Diagnosis
665.83	Other specified obstetrical trauma, antepartum	ICD-9-CM	Diagnosis
665.84	Other specified obstetrical trauma, postpartum condition or complication	ICD-9-CM	Diagnosis
665.9	Unspecified obstetrical trauma	ICD-9-CM	Diagnosis
665.90	Unspecified obstetrical trauma, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.91	Unspecified obstetrical trauma, with delivery	ICD-9-CM	Diagnosis
665.92	Unspecified obstetrical trauma, delivered, with postpartum complication	ICD-9-CM	Diagnosis
665.93	Unspecified obstetrical trauma, antepartum	ICD-9-CM	Diagnosis
665.94	Unspecified obstetrical trauma, postpartum condition or complication	ICD-9-CM	Diagnosis
666	Postpartum hemorrhage	ICD-9-CM	Diagnosis
666.0	Third-stage postpartum hemorrhage	ICD-9-CM	Diagnosis
666.00	Third-stage postpartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.02	Third-stage postpartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
666.04	Third-stage postpartum hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
666.1	Other immediate postpartum hemorrhage	ICD-9-CM	Diagnosis
666.10	Other immediate postpartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.12	Other immediate postpartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
666.14	Other immediate postpartum hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
666.2	Delayed and secondary postpartum hemorrhage	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
666.20	Delayed and secondary postpartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.22	Delayed and secondary postpartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
666.24	Delayed and secondary postpartum hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
666.3	Postpartum coagulation defects	ICD-9-CM	Diagnosis
666.30	Postpartum coagulation defects, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.32	Postpartum coagulation defects, with delivery	ICD-9-CM	Diagnosis
666.34	Postpartum coagulation defects, postpartum condition or complication	ICD-9-CM	Diagnosis
667	Retained placenta or membranes, without hemorrhage	ICD-9-CM	Diagnosis
667.0	Retained placenta without hemorrhage	ICD-9-CM	Diagnosis
667.00	Retained placenta without hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
667.02	Retained placenta without hemorrhage, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
667.04	Retained placenta without hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
667.1	Retained portions of placenta or membranes, without hemorrhage	ICD-9-CM	Diagnosis
667.10	Retained portions of placenta or membranes, without hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
667.12	Retained portions of placenta or membranes, without hemorrhage, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
667.14	Retained portions of placenta or membranes, without hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
668	Complications of the administration of anesthetic or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.0	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.00	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.01	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.02	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.03	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.04	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.1	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.10	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.11	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.12	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.13	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
668.14	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.2	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.20	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.21	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.22	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.23	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.24	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.8	Other complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.80	Other complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.81	Other complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.82	Other complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.83	Other complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.84	Other complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.9	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.90	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.91	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.92	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.93	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.94	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669	Other complications of labor and delivery, not elsewhere classified	ICD-9-CM	Diagnosis
669.0	Maternal distress	ICD-9-CM	Diagnosis
669.00	Maternal distress complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.01	Maternal distress, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.02	Maternal distress, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
669.03	Maternal distress complicating labor and delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
669.04	Maternal distress complicating labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.1	Shock during or following labor and delivery	ICD-9-CM	Diagnosis
669.10	Shock during or following labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.11	Shock during or following labor and delivery, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.12	Shock during or following labor and delivery, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.13	Shock during or following labor and delivery, antepartum shock	ICD-9-CM	Diagnosis
669.14	Shock during or following labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.2	Maternal hypotension syndrome	ICD-9-CM	Diagnosis
669.20	Maternal hypotension syndrome complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.21	Maternal hypotension syndrome, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.22	Maternal hypotension syndrome, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.23	Maternal hypotension syndrome, antepartum	ICD-9-CM	Diagnosis
669.24	Maternal hypotension syndrome, postpartum condition or complication	ICD-9-CM	Diagnosis
669.3	Acute kidney failure following labor and delivery	ICD-9-CM	Diagnosis
669.30	Acute kidney failure following labor and delivery, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
669.32	Acute kidney failure following labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.34	Acute kidney failure following labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.4	Other complications of obstetrical surgery and procedures	ICD-9-CM	Diagnosis
669.40	Other complications of obstetrical surgery and procedures, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.41	Other complications of obstetrical surgery and procedures, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.42	Other complications of obstetrical surgery and procedures, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.43	Other complications of obstetrical surgery and procedures, antepartum condition or complication	ICD-9-CM	Diagnosis
669.44	Other complications of obstetrical surgery and procedures, postpartum condition or complication	ICD-9-CM	Diagnosis
669.5	Forceps or vacuum extractor delivery without mention of indication	ICD-9-CM	Diagnosis
669.50	Forceps or vacuum extractor delivery without mention of indication, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.51	Forceps or vacuum extractor delivery without mention of indication, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.6	Breech extraction, without mention of indication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
669.60	Breech extraction, without mention of indication, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.61	Breech extraction, without mention of indication, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.7	Cesarean delivery, without mention of indication	ICD-9-CM	Diagnosis
669.70	Cesarean delivery, without mention of indication, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.71	Cesarean delivery, without mention of indication, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.8	Other complications of labor and delivery	ICD-9-CM	Diagnosis
669.80	Other complication of labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.81	Other complication of labor and delivery, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.82	Other complication of labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.83	Other complication of labor and delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
669.84	Other complication of labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.9	Unspecified complication of labor and delivery	ICD-9-CM	Diagnosis
669.90	Unspecified complication of labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.91	Unspecified complication of labor and delivery, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.92	Unspecified complication of labor and delivery, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.93	Unspecified complication of labor and delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
669.94	Unspecified complication of labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
670	Major puerperal infection	ICD-9-CM	Diagnosis
670.0	Major puerperal infection, unspecified	ICD-9-CM	Diagnosis
670.00	Major puerperal infection, unspecified, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.02	Major puerperal infection, unspecified, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.04	Major puerperal infection, unspecified, postpartum condition or complication	ICD-9-CM	Diagnosis
670.1	Puerperal endometritis	ICD-9-CM	Diagnosis
670.10	Puerperal endometritis, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.12	Puerperal endometritis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.14	Puerperal endometritis, postpartum condition or complication	ICD-9-CM	Diagnosis
670.2	Puerperal sepsis	ICD-9-CM	Diagnosis
670.20	Puerperal sepsis, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.22	Puerperal sepsis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.24	Puerperal sepsis, postpartum condition or complication	ICD-9-CM	Diagnosis
670.3	Puerperal septic thrombophlebitis	ICD-9-CM	Diagnosis
670.30	Puerperal septic thrombophlebitis, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
670.32	Puerperal septic thrombophlebitis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.34	Puerperal septic thrombophlebitis, postpartum condition or complication	ICD-9-CM	Diagnosis
670.8	Other major puerperal infection	ICD-9-CM	Diagnosis
670.80	Other major puerperal infection, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.82	Other major puerperal infection, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.84	Other major puerperal infection, postpartum condition or complication	ICD-9-CM	Diagnosis
671	Venous complications in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.0	Varicose veins of legs in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.00	Varicose veins of legs complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.01	Varicose veins of legs, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.02	Varicose veins of legs, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.03	Varicose veins of legs, antepartum	ICD-9-CM	Diagnosis
671.04	Varicose veins of legs, postpartum condition or complication	ICD-9-CM	Diagnosis
671.1	Varicose veins of vulva and perineum in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.10	Varicose veins of vulva and perineum complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.11	Varicose veins of vulva and perineum, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.12	Varicose veins of vulva and perineum, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.13	Varicose veins of vulva and perineum, antepartum	ICD-9-CM	Diagnosis
671.14	Varicose veins of vulva and perineum, postpartum condition or complication	ICD-9-CM	Diagnosis
671.2	Superficial thrombophlebitis in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.20	Superficial thrombophlebitis complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.21	Superficial thrombophlebitis with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.22	Superficial thrombophlebitis with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.23	Superficial thrombophlebitis, antepartum	ICD-9-CM	Diagnosis
671.24	Superficial thrombophlebitis, postpartum condition or complication	ICD-9-CM	Diagnosis
671.3	Deep phlebothrombosis, antepartum	ICD-9-CM	Diagnosis
671.30	Deep phlebothrombosis, antepartum, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.31	Deep phlebothrombosis, antepartum, with delivery	ICD-9-CM	Diagnosis
671.33	Deep phlebothrombosis, antepartum	ICD-9-CM	Diagnosis
671.4	Deep phlebothrombosis, postpartum	ICD-9-CM	Diagnosis
671.40	Deep phlebothrombosis, postpartum, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.42	Deep phlebothrombosis, postpartum, with delivery	ICD-9-CM	Diagnosis
671.44	Deep phlebothrombosis, postpartum condition or complication	ICD-9-CM	Diagnosis
671.5	Other phlebitis and thrombosis in pregnancy and the puerperium	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
671.50	Other phlebitis and thrombosis complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.51	Other phlebitis and thrombosis with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.52	Other phlebitis and thrombosis with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.53	Other antepartum phlebitis and thrombosis	ICD-9-CM	Diagnosis
671.54	Other phlebitis and thrombosis, postpartum condition or complication	ICD-9-CM	Diagnosis
671.8	Other venous complications in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.80	Other venous complication of pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.81	Other venous complication, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.82	Other venous complication, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.83	Other venous complication, antepartum	ICD-9-CM	Diagnosis
671.84	Other venous complications, postpartum condition or complication	ICD-9-CM	Diagnosis
671.9	Unspecified venous complication in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.90	Unspecified venous complication of pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.91	Unspecified venous complication, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.92	Unspecified venous complication, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.93	Unspecified venous complication, antepartum	ICD-9-CM	Diagnosis
671.94	Unspecified venous complication, postpartum condition or complication	ICD-9-CM	Diagnosis
672	Pyrexia of unknown origin during the puerperium	ICD-9-CM	Diagnosis
672.0	Pyrexia of unknown origin during the puerperium	ICD-9-CM	Diagnosis
672.00	Puerperal pyrexia of unknown origin, unspecified as to episode of care	ICD-9-CM	Diagnosis
672.02	Puerperal pyrexia of unknown origin, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
672.04	Puerperal pyrexia of unknown origin, postpartum condition or complication	ICD-9-CM	Diagnosis
673	Obstetrical pulmonary embolism	ICD-9-CM	Diagnosis
673.0	Obstetrical air embolism	ICD-9-CM	Diagnosis
673.00	Obstetrical air embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.01	Obstetrical air embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.02	Obstetrical air embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.03	Obstetrical air embolism, antepartum condition or complication	ICD-9-CM	Diagnosis
673.04	Obstetrical air embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.1	Amniotic fluid embolism	ICD-9-CM	Diagnosis
673.10	Amniotic fluid embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.11	Amniotic fluid embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
673.12	Amniotic fluid embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.13	Amniotic fluid embolism, antepartum condition or complication	ICD-9-CM	Diagnosis
673.14	Amniotic fluid embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.2	Obstetrical blood-clot embolism	ICD-9-CM	Diagnosis
673.20	Obstetrical blood-clot embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.21	Obstetrical blood-clot embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.22	Obstetrical blood-clot embolism, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.23	Obstetrical blood-clot embolism, antepartum	ICD-9-CM	Diagnosis
673.24	Obstetrical blood-clot embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.3	Obstetrical pyemic and septic embolism	ICD-9-CM	Diagnosis
673.30	Obstetrical pyemic and septic embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.31	Obstetrical pyemic and septic embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.32	Obstetrical pyemic and septic embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.33	Obstetrical pyemic and septic embolism, antepartum	ICD-9-CM	Diagnosis
673.34	Obstetrical pyemic and septic embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.8	Other obstetrical pulmonary embolism	ICD-9-CM	Diagnosis
673.80	Other obstetrical pulmonary embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.81	Other obstetrical pulmonary embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.82	Other obstetrical pulmonary embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.83	Other obstetrical pulmonary embolism, antepartum	ICD-9-CM	Diagnosis
673.84	Other obstetrical pulmonary embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
674	Other and unspecified complications of the puerperium, not elsewhere classified	ICD-9-CM	Diagnosis
674.0	Cerebrovascular disorders in the puerperium	ICD-9-CM	Diagnosis
674.00	Cerebrovascular disorder occurring in pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.01	Cerebrovascular disorder, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
674.02	Cerebrovascular disorder, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.03	Cerebrovascular disorder, antepartum	ICD-9-CM	Diagnosis
674.04	Cerebrovascular disorders in the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
674.1	Disruption of cesarean wound	ICD-9-CM	Diagnosis
674.10	Disruption of cesarean wound, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.12	Disruption of cesarean wound, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.14	Disruption of cesarean wound, postpartum condition or complication	ICD-9-CM	Diagnosis
674.2	Disruption of obstetrical perineal wound	ICD-9-CM	Diagnosis
674.20	Disruption of perineal wound, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
674.22	Disruption of perineal wound, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.24	Disruption of perineal wound, postpartum condition or complication	ICD-9-CM	Diagnosis
674.3	Other complications of obstetrical surgical wounds	ICD-9-CM	Diagnosis
674.30	Other complication of obstetrical surgical wounds, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.32	Other complication of obstetrical surgical wounds, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.34	Other complications of obstetrical surgical wounds, postpartum condition or complication	ICD-9-CM	Diagnosis
674.4	Placental polyp	ICD-9-CM	Diagnosis
674.40	Placental polyp, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.42	Placental polyp, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.44	Placental polyp, postpartum condition or complication	ICD-9-CM	Diagnosis
674.5	Peripartum cardiomyopathy	ICD-9-CM	Diagnosis
674.50	Peripartum cardiomyopathy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
674.51	Peripartum cardiomyopathy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
674.52	Peripartum cardiomyopathy, delivered, with mention of postpartum condition	ICD-9-CM	Diagnosis
674.53	Peripartum cardiomyopathy, antepartum condition or complication	ICD-9-CM	Diagnosis
674.54	Peripartum cardiomyopathy, postpartum condition or complication	ICD-9-CM	Diagnosis
674.8	Other complications of the puerperium	ICD-9-CM	Diagnosis
674.80	Other complication of puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.82	Other complication of puerperium, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.84	Other complications of puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
674.9	Unspecified complications of the puerperium	ICD-9-CM	Diagnosis
674.90	Unspecified complications of puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.92	Unspecified complications of puerperium, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.94	Unspecified complications of puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
675	Infection of the breast and nipple associated with childbirth	ICD-9-CM	Diagnosis
675.0	Infection of nipple associated with childbirth	ICD-9-CM	Diagnosis
675.00	Infection of nipple associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
675.01	Infection of nipple associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.02	Infection of nipple associated with childbirth, delivered with mention of postpartum complication	ICD-9-CM	Diagnosis
675.03	Infection of nipple, antepartum	ICD-9-CM	Diagnosis
675.04	Infection of nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
675.1	Abscess of breast associated with childbirth	ICD-9-CM	Diagnosis
675.10	Abscess of breast associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
675.11	Abscess of breast associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.12	Abscess of breast associated with childbirth, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
675.13	Abscess of breast, antepartum	ICD-9-CM	Diagnosis
675.14	Abscess of breast, postpartum condition or complication	ICD-9-CM	Diagnosis
675.2	Nonpurulent mastitis associated with childbirth	ICD-9-CM	Diagnosis
675.20	Nonpurulent mastitis, unspecified as to episode of prenatal or postnatal care	ICD-9-CM	Diagnosis
675.21	Nonpurulent mastitis, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.22	Nonpurulent mastitis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
675.23	Nonpurulent mastitis, antepartum	ICD-9-CM	Diagnosis
675.24	Nonpurulent mastitis, postpartum condition or complication	ICD-9-CM	Diagnosis
675.8	Other specified infection of the breast and nipple associated with childbirth	ICD-9-CM	Diagnosis
675.80	Other specified infection of the breast and nipple associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
675.81	Other specified infection of the breast and nipple associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.82	Other specified infection of the breast and nipple associated with childbirth, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
675.83	Other specified infection of the breast and nipple, antepartum	ICD-9-CM	Diagnosis
675.84	Other specified infections of the breast and nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
675.9	Unspecified infection of the breast and nipple associated with childbirth	ICD-9-CM	Diagnosis
675.90	Unspecified infection of the breast and nipple, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
675.91	Unspecified infection of the breast and nipple, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.92	Unspecified infection of the breast and nipple, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
675.93	Unspecified infection of the breast and nipple, antepartum	ICD-9-CM	Diagnosis
675.94	Unspecified infection of the breast and nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
676	Other disorders of the breast associated with childbirth and disorders of lactation	ICD-9-CM	Diagnosis
676.0	Retracted nipple associated with childbirth	ICD-9-CM	Diagnosis
676.00	Retracted nipple, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
676.01	Retracted nipple, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.02	Retracted nipple, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.03	Retracted nipple, antepartum condition or complication	ICD-9-CM	Diagnosis
676.04	Retracted nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
676.1	Cracked nipple associated with childbirth	ICD-9-CM	Diagnosis
676.10	Cracked nipple, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
676.11	Cracked nipple, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.12	Cracked nipple, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.13	Cracked nipple, antepartum condition or complication	ICD-9-CM	Diagnosis
676.14	Cracked nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
676.2	Engorgement of breasts associated with childbirth	ICD-9-CM	Diagnosis
676.20	Engorgement of breasts, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
676.21	Engorgement of breasts, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
676.22	Engorgement of breasts, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.23	Engorgement of breast, antepartum	ICD-9-CM	Diagnosis
676.24	Engorgement of breasts, postpartum condition or complication	ICD-9-CM	Diagnosis
676.3	Other and unspecified disorder of breast associated with childbirth	ICD-9-CM	Diagnosis
676.30	Other and unspecified disorder of breast associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.31	Other and unspecified disorder of breast associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.32	Other and unspecified disorder of breast associated with childbirth, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.33	Other and unspecified disorder of breast associated with childbirth, antepartum condition or complication	ICD-9-CM	Diagnosis
676.34	Other and unspecified disorder of breast associated with childbirth, postpartum condition or complication	ICD-9-CM	Diagnosis
676.4	Failure of lactation	ICD-9-CM	Diagnosis
676.40	Failure of lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.41	Failure of lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.42	Failure of lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.43	Failure of lactation, antepartum condition or complication	ICD-9-CM	Diagnosis
676.44	Failure of lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
676.5	Suppressed lactation	ICD-9-CM	Diagnosis
676.50	Suppressed lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.51	Suppressed lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.52	Suppressed lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.53	Suppressed lactation, antepartum condition or complication	ICD-9-CM	Diagnosis
676.54	Suppressed lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
676.6	Galactorrhea	ICD-9-CM	Diagnosis
676.60	Galactorrhea associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.61	Galactorrhea, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.62	Galactorrhea, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.63	Galactorrhea, antepartum condition or complication	ICD-9-CM	Diagnosis
676.64	Galactorrhea, postpartum condition or complication	ICD-9-CM	Diagnosis
676.8	Other disorders of lactation	ICD-9-CM	Diagnosis
676.80	Other disorder of lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.81	Other disorder of lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.82	Other disorder of lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.83	Other disorder of lactation, antepartum condition or complication	ICD-9-CM	Diagnosis
676.84	Other disorders of lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
676.9	Unspecified disorder of lactation	ICD-9-CM	Diagnosis
676.90	Unspecified disorder of lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.91	Unspecified disorder of lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
676.92	Unspecified disorder of lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.93	Unspecified disorder of lactation, antepartum condition or complication	ICD-9-CM	Diagnosis
676.94	Unspecified disorder of lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
677	Late effect of complication of pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
678	Other fetal conditions	ICD-9-CM	Diagnosis
678.0	Fetal hematologic conditions	ICD-9-CM	Diagnosis
678.00	Fetal hematologic conditions, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
678.01	Fetal hematologic conditions, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
678.03	Fetal hematologic conditions, antepartum condition or complication	ICD-9-CM	Diagnosis
678.1	Fetal conjoined twins	ICD-9-CM	Diagnosis
678.10	Fetal conjoined twins, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
678.11	Fetal conjoined twins, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
678.13	Fetal conjoined twins, antepartum condition or complication	ICD-9-CM	Diagnosis
679	Complications of in utero procedures	ICD-9-CM	Diagnosis
679.0	Maternal complications from in utero procedure	ICD-9-CM	Diagnosis
679.00	Maternal complications from in utero procedure, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
679.01	Maternal complications from in utero procedure, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
679.02	Maternal complications from in utero procedure, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
679.03	Maternal complications from in utero procedure, antepartum condition or complication	ICD-9-CM	Diagnosis
679.04	Maternal complications from in utero procedure, postpartum condition or complication	ICD-9-CM	Diagnosis
679.1	Fetal complications from in utero procedure	ICD-9-CM	Diagnosis
679.10	Fetal complications from in utero procedure, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
679.11	Fetal complications from in utero procedure, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
679.12	Fetal complications from in utero procedure, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
679.13	Fetal complications from in utero procedure, antepartum condition or complication	ICD-9-CM	Diagnosis
679.14	Fetal complications from in utero procedure, postpartum condition or complication	ICD-9-CM	Diagnosis
V22	Normal pregnancy	ICD-9-CM	Diagnosis
V22.0	Supervision of normal first pregnancy	ICD-9-CM	Diagnosis
V22.1	Supervision of other normal pregnancy	ICD-9-CM	Diagnosis
V22.2	Pregnant state, incidental	ICD-9-CM	Diagnosis
V23	Supervision of high-risk pregnancy	ICD-9-CM	Diagnosis
V23.0	Pregnancy with history of infertility	ICD-9-CM	Diagnosis
V23.1	Pregnancy with history of trophoblastic disease	ICD-9-CM	Diagnosis

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report

Code	Description	Code Type	Code Category
V23.2	Pregnancy with history of abortion	ICD-9-CM	Diagnosis
V23.3	Pregnancy with grand multiparity	ICD-9-CM	Diagnosis
V23.4	Pregnancy with other poor obstetric history	ICD-9-CM	Diagnosis
V23.41	Supervision of pregnancy with history of pre-term labor	ICD-9-CM	Diagnosis
V23.42	Pregnancy with history of ectopic pregnancy	ICD-9-CM	Diagnosis
V23.49	Supervision of pregnancy with other poor obstetric history	ICD-9-CM	Diagnosis
V23.5	Pregnancy with other poor reproductive history	ICD-9-CM	Diagnosis
V23.7	Insufficient prenatal care	ICD-9-CM	Diagnosis
V23.8	Supervision of other high-risk pregnancy	ICD-9-CM	Diagnosis
V23.81	Supervision of high-risk pregnancy of elderly primigravida	ICD-9-CM	Diagnosis
V23.82	Supervision of high-risk pregnancy of elderly multigravida	ICD-9-CM	Diagnosis
V23.83	Supervision of high-risk pregnancy of young primigravida	ICD-9-CM	Diagnosis
V23.84	Supervision of high-risk pregnancy of young multigravida	ICD-9-CM	Diagnosis
V23.85	Supervision of high risk pregnancy, pregnancy resulting from assisted reproductive technology	ICD-9-CM	Diagnosis
V23.86	Supervision of high risk pregnancy, pregnancy with history of in utero procedure during previous pregnancy	ICD-9-CM	Diagnosis
V23.87	Pregnancy with inconclusive fetal viability	ICD-9-CM	Diagnosis
V23.89	Supervision of other high-risk pregnancy	ICD-9-CM	Diagnosis
V23.9	Unspecified high-risk pregnancy	ICD-9-CM	Diagnosis
V28	Encounter for antenatal screening of mother	ICD-9-CM	Diagnosis
V28.0	Screening for chromosomal anomalies by amniocentesis	ICD-9-CM	Diagnosis
V28.1	Screening for raised alpha-fetoprotein levels in amniotic fluid	ICD-9-CM	Diagnosis
V28.2	Other antenatal screening based on amniocentesis	ICD-9-CM	Diagnosis
V28.3	Encounter for routine screening for malformation using ultrasonics	ICD-9-CM	Diagnosis
V28.4	Antenatal screening for fetal growth retardation using ultrasonics	ICD-9-CM	Diagnosis
V28.5	Antenatal screening for isoimmunization	ICD-9-CM	Diagnosis
V28.6	Screening of Streptococcus B	ICD-9-CM	Diagnosis
V28.8	Encounter for other specified antenatal screening	ICD-9-CM	Diagnosis
V28.81	Encounter for fetal anatomic survey	ICD-9-CM	Diagnosis
V28.82	Encounter for screening for risk of pre-term labor	ICD-9-CM	Diagnosis
V28.89	Other specified antenatal screening	ICD-9-CM	Diagnosis
V28.9	Unspecified antenatal screening	ICD-9-CM	Diagnosis

Appendix D. List of Generic Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report

Generic Name
Short-Acting Insulin
insulin regular,human&rel.unt
reg insulin hm/rlse/chbr/ihlr
insulin reg human semi-syn
insulin regular, human
insulin reg, hum s-s buff
insulin regular,beef-pork
insulin regular,human buffered
insulin,beef
insulin,pork
insulin,pork purified
insulin,pork reg. concentrate
insulin aspart
insulin glulisine
insulin lispro
insulin isophane,beef
insulin isophane,beef pure
insulin isophane,pork pure
Anti-Diabetes Medication (Except Short-Acting Insulins)
Saxagliptin
saxagliptin hcl/metformin hcl
saxagliptin hcl
Sitagliptin
sitagliptin phos/metformin hcl
sitagliptin/simvastatin
sitagliptin phosphate
Long-Acting Insulin
hum insulin nph/reg insulin hm
insulin glargine,hum.rec.anlog
insulin nph human semi-syn
insulin nph s-s/reg insuln s-s
insuln asp prt/insulin aspart
nph, human insulin isophane
insulin detemir
insulin npl/insulin lispro
ins zn,bf (p)/ins zn,pk (p)
insul,pk pure/insul nph,pk-p
insulin isophane nph,bf-pk
insulin protamine zinc,beef
insulin protamine zn,beef (p)
insulin protamine zn,bf-pk
insulin protamine zn,pork (p)
insulin zinc beef
insulin zinc ext,beef (p)
insulin zinc extend human rec
insulin zinc extended,beef
insulin zinc extended,bf-pk

Appendix D. List of Generic Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report

Generic Name
insulin zinc human rec
insulin zinc human semi-syn
insulin zinc prompt,beef
insulin zinc prompt,bf-pk
insulin zinc prompt,pork pure
insulin zinc,beef purified
insulin zinc,beef-pork
insulin zinc,pork purified
Pioglitazone
alogliptin benz/pioglitzone
pioglitazone hcl
pioglitazone hcl/metformin hcl
pioglitazone hcl/glimepiride
Second Generation Sulfonylurea
glipizide/metformin hcl
glyburide/metformin hcl
pioglitazone hcl/glimepiride
glimepiride
glipizide
glyburide
glyburide,micronized
rosiglitazone/glimepiride
Alpha-Glucosidase Inhibitor
acarbose
miglitol
Biguanide
metformin/aa comb.#7/hc#125/ch
metformin/caff/aa7/hrb125/chol
metformin hcl
saxagliptin hcl/metformin hcl
sitagliptin phos/metformin hcl
glipizide/metformin hcl
glyburide/metformin hcl
alogliptin benz/metformin hcl
linagliptin/metformin hcl
repaglinide/metformin hcl
pioglitazone hcl/metformin hcl
rosiglitazone/metformin hcl
Other Dipeptidyl Peptidase-4 (DPP-4) Inhibitor
alogliptin benzoate
linagliptin
alogliptin benz/metformin hcl
linagliptin/metformin hcl
alogliptin benz/pioglitzone

Appendix D. List of Generic Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report

Generic Name
Meglitinide
nateglinide
repaglinide
repaglinide/metformin hcl
First Generation Sulfonylurea
acetohexamide
chlorpropamide
tolazamide
tolbutamide
Other Thiazolidinedione
rosiglitazone maleate
troglitazone
rosiglitazone/metformin hcl
rosiglitazone/glimepiride
Other Anti-Diabetes Medication (GLP-1 Analogues, Amylin Analog-Types, Canagliflozin)
canagliflozin
exenatide
liraglutide
pramlintide acetate
exenatide microspheres

Appendix E. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Outcome and Outcome Incidence Criteria in this Report

Code	Description	Code Type	Code Category
	Acute Myocardial Infarction		
410.00	Acute myocardial infarction of anterolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.01	Acute myocardial infarction of anterolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.10	Acute myocardial infarction of other anterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.11	Acute myocardial infarction of other anterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.20	Acute myocardial infarction of inferolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.21	Acute myocardial infarction of inferolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.30	Acute myocardial infarction of inferoposterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.31	Acute myocardial infarction of inferoposterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.40	Acute myocardial infarction of other inferior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.41	Acute myocardial infarction of other inferior wall, initial episode of care	ICD-9-CM	Diagnosis
410.50	Acute myocardial infarction of other lateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.51	Acute myocardial infarction of other lateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.60	Acute myocardial infarction, true posterior wall infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.61	Acute myocardial infarction, true posterior wall infarction, initial episode of care	ICD-9-CM	Diagnosis
410.70	Acute myocardial infarction, subendocardial infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.71	Acute myocardial infarction, subendocardial infarction, initial episode of care	ICD-9-CM	Diagnosis
410.80	Acute myocardial infarction of other specified sites, episode of care unspecified	ICD-9-CM	Diagnosis
410.81	Acute myocardial infarction of other specified sites, initial episode of care	ICD-9-CM	Diagnosis
410.90	Acute myocardial infarction, unspecified site, episode of care unspecified	ICD-9-CM	Diagnosis
410.91	Acute myocardial infarction, unspecified site, initial episode of care	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
	Cardiovascular Disease		
	Prior Acute Myocardial Infarction (AMI)		
410	Acute myocardial infarction	ICD-9-CM	Diagnosis
410.0	Acute myocardial infarction of anterolateral wall	ICD-9-CM	Diagnosis
410.00	Acute myocardial infarction of anterolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.01	Acute myocardial infarction of anterolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.02	Acute myocardial infarction of anterolateral wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.1	Acute myocardial infarction of other anterior wall	ICD-9-CM	Diagnosis
410.10	Acute myocardial infarction of other anterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.11	Acute myocardial infarction of other anterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.12	Acute myocardial infarction of other anterior wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.2	Acute myocardial infarction of inferolateral wall	ICD-9-CM	Diagnosis
410.20	Acute myocardial infarction of inferolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.21	Acute myocardial infarction of inferolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.22	Acute myocardial infarction of inferolateral wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.3	Acute myocardial infarction of inferoposterior wall	ICD-9-CM	Diagnosis
410.30	Acute myocardial infarction of inferoposterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.31	Acute myocardial infarction of inferoposterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.32	Acute myocardial infarction of inferoposterior wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.4	Acute myocardial infarction of other inferior wall	ICD-9-CM	Diagnosis
410.40	Acute myocardial infarction of other inferior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.41	Acute myocardial infarction of other inferior wall, initial episode of care	ICD-9-CM	Diagnosis
410.42	Acute myocardial infarction of other inferior wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.5	Acute myocardial infarction of other lateral wall	ICD-9-CM	Diagnosis
410.50	Acute myocardial infarction of other lateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.51	Acute myocardial infarction of other lateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.52	Acute myocardial infarction of other lateral wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.6	Acute myocardial infarction, true posterior wall infarction	ICD-9-CM	Diagnosis
410.60	Acute myocardial infarction, true posterior wall infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.61	Acute myocardial infarction, true posterior wall infarction, initial episode of care	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
410.62	Acute myocardial infarction, true posterior wall infarction, subsequent episode of care	ICD-9-CM	Diagnosis
410.7	Acute myocardial infarction, subendocardial infarction	ICD-9-CM	Diagnosis
410.70	Acute myocardial infarction, subendocardial infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.71	Acute myocardial infarction, subendocardial infarction, initial episode of care	ICD-9-CM	Diagnosis
410.72	Acute myocardial infarction, subendocardial infarction, subsequent episode of care	ICD-9-CM	Diagnosis
410.8	Acute myocardial infarction of other specified sites	ICD-9-CM	Diagnosis
410.80	Acute myocardial infarction of other specified sites, episode of care unspecified	ICD-9-CM	Diagnosis
410.81	Acute myocardial infarction of other specified sites, initial episode of care	ICD-9-CM	Diagnosis
410.82	Acute myocardial infarction of other specified sites, subsequent episode of care	ICD-9-CM	Diagnosis
410.9	Acute myocardial infarction, unspecified site	ICD-9-CM	Diagnosis
410.90	Acute myocardial infarction, unspecified site, episode of care unspecified	ICD-9-CM	Diagnosis
410.91	Acute myocardial infarction, unspecified site, initial episode of care	ICD-9-CM	Diagnosis
410.92	Acute myocardial infarction, unspecified site, subsequent episode of care	ICD-9-CM	Diagnosis
	Other Ischemic Heart Disease		
411	Other acute and subacute forms of ischemic heart disease	ICD-9-CM	Diagnosis
411.0	Postmyocardial infarction syndrome	ICD-9-CM	Diagnosis
411.1	Intermediate coronary syndrome	ICD-9-CM	Diagnosis
411.8	Other acute and subacute forms of ischemic heart disease	ICD-9-CM	Diagnosis
411.81	Acute coronary occlusion without myocardial infarction	ICD-9-CM	Diagnosis
411.89	Other acute and subacute form of ischemic heart disease	ICD-9-CM	Diagnosis
412	Old myocardial infarction	ICD-9-CM	Diagnosis
413	Angina pectoris	ICD-9-CM	Diagnosis
413.0	Angina decubitus	ICD-9-CM	Diagnosis
413.1	Prinzmetal angina	ICD-9-CM	Diagnosis
413.9	Other and unspecified angina pectoris	ICD-9-CM	Diagnosis
414	Other forms of chronic ischemic heart disease	ICD-9-CM	Diagnosis
414.0	Coronary atherosclerosis	ICD-9-CM	Diagnosis
414.00	Coronary atherosclerosis of unspecified type of vessel, native or graft	ICD-9-CM	Diagnosis
414.01	Coronary atherosclerosis of native coronary artery	ICD-9-CM	Diagnosis
414.02	Coronary atherosclerosis of autologous vein bypass graft	ICD-9-CM	Diagnosis
414.03	Coronary atherosclerosis of nonautologous biological bypass graft	ICD-9-CM	Diagnosis
414.04	Coronary atherosclerosis of artery bypass graft	ICD-9-CM	Diagnosis
414.05	Coronary atherosclerosis of unspecified type of bypass graft	ICD-9-CM	Diagnosis
414.06	Coronary atherosclerosis, of native coronary artery of transplanted heart	ICD-9-CM	Diagnosis
414.07	Coronary atherosclerosis, of bypass graft (artery) (vein) of transplanted heart	ICD-9-CM	Diagnosis
414.1	Aneurysm and dissection of heart	ICD-9-CM	Diagnosis
414.10	Aneurysm of heart	ICD-9-CM	Diagnosis
414.11	Aneurysm of coronary vessels	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
414.12	Dissection of coronary artery	ICD-9-CM	Diagnosis
414.19	Other aneurysm of heart	ICD-9-CM	Diagnosis
414.2	Chronic total occlusion of coronary artery	ICD-9-CM	Diagnosis
414.3	Coronary atherosclerosis due to lipid rich plaque	ICD-9-CM	Diagnosis
414.4	Coronary atherosclerosis due to calcified coronary lesion	ICD-9-CM	Diagnosis
414.8	Other specified forms of chronic ischemic heart disease	ICD-9-CM	Diagnosis
414.9	Unspecified chronic ischemic heart disease	ICD-9-CM	Diagnosis
	Congestive Heart Failure		
402.01	Malignant hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.11	Benign hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.91	Hypertensive heart disease, unspecified, with heart failure	ICD-9-CM	Diagnosis
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
428	Heart failure	ICD-9-CM	Diagnosis
428.0	Congestive heart failure, unspecified	ICD-9-CM	Diagnosis
428.1	Left heart failure	ICD-9-CM	Diagnosis
428.2	Systolic heart failure	ICD-9-CM	Diagnosis
428.20	Unspecified systolic heart failure	ICD-9-CM	Diagnosis
428.21	Acute systolic heart failure	ICD-9-CM	Diagnosis
428.22	Chronic systolic heart failure	ICD-9-CM	Diagnosis
428.23	Acute on chronic systolic heart failure	ICD-9-CM	Diagnosis
428.3	Diastolic heart failure	ICD-9-CM	Diagnosis
428.30	Unspecified diastolic heart failure	ICD-9-CM	Diagnosis
428.31	Acute diastolic heart failure	ICD-9-CM	Diagnosis
428.32	Chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.33	Acute on chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.4	Combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.40	Unspecified combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.41	Acute combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.42	Chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.43	Acute on chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.9	Unspecified heart failure	ICD-9-CM	Diagnosis
	Other Heart Disease		

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Code	Description	Code Type	Code Category
402.00	Malignant hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.10	Benign hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.90	Unspecified hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
404.00	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.02	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.10	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.12	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.90	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.92	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
420	Acute pericarditis	ICD-9-CM	Diagnosis
420.0	Acute pericarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis
420.9	Other and unspecified acute pericarditis	ICD-9-CM	Diagnosis
420.90	Unspecified acute pericarditis	ICD-9-CM	Diagnosis
420.91	Acute idiopathic pericarditis	ICD-9-CM	Diagnosis
420.99	Other acute pericarditis	ICD-9-CM	Diagnosis
421	Acute and subacute endocarditis	ICD-9-CM	Diagnosis
421.0	Acute and subacute bacterial endocarditis	ICD-9-CM	Diagnosis
421.1	Acute and subacute infective endocarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis
421.9	Unspecified acute endocarditis	ICD-9-CM	Diagnosis
422	Acute myocarditis	ICD-9-CM	Diagnosis
422.0	Acute myocarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis
422.9	Other and unspecified acute myocarditis	ICD-9-CM	Diagnosis
422.90	Unspecified acute myocarditis	ICD-9-CM	Diagnosis
422.91	Idiopathic myocarditis	ICD-9-CM	Diagnosis
422.92	Septic myocarditis	ICD-9-CM	Diagnosis
422.93	Toxic myocarditis	ICD-9-CM	Diagnosis
422.99	Other acute myocarditis	ICD-9-CM	Diagnosis
423	Other diseases of pericardium	ICD-9-CM	Diagnosis
423.0	Hemopericardium	ICD-9-CM	Diagnosis
423.1	Adhesive pericarditis	ICD-9-CM	Diagnosis
423.2	Constrictive pericarditis	ICD-9-CM	Diagnosis
423.3	Cardiac tamponade	ICD-9-CM	Diagnosis
423.8	Other specified diseases of pericardium	ICD-9-CM	Diagnosis
423.9	Unspecified disease of pericardium	ICD-9-CM	Diagnosis
424	Other diseases of endocardium	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
424.0	Mitral valve disorders	ICD-9-CM	Diagnosis
424.1	Aortic valve disorders	ICD-9-CM	Diagnosis
424.2	Tricuspid valve disorders, specified as nonrheumatic	ICD-9-CM	Diagnosis
424.3	Pulmonary valve disorders	ICD-9-CM	Diagnosis
424.9	Endocarditis, valve unspecified	ICD-9-CM	Diagnosis
424.90	Endocarditis, valve unspecified, unspecified cause	ICD-9-CM	Diagnosis
424.91	Endocarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis
424.99	Other endocarditis, valve unspecified	ICD-9-CM	Diagnosis
425	Cardiomyopathy	ICD-9-CM	Diagnosis
425.0	Endomyocardial fibrosis	ICD-9-CM	Diagnosis
425.1	Hypertrophic cardiomyopathy	ICD-9-CM	Diagnosis
425.11	Hypertrophic obstructive cardiomyopathy	ICD-9-CM	Diagnosis
425.18	Other hypertrophic cardiomyopathy	ICD-9-CM	Diagnosis
425.2	Obscure cardiomyopathy of Africa	ICD-9-CM	Diagnosis
425.3	Endocardial fibroelastosis	ICD-9-CM	Diagnosis
425.4	Other primary cardiomyopathies	ICD-9-CM	Diagnosis
425.5	Alcoholic cardiomyopathy	ICD-9-CM	Diagnosis
425.7	Nutritional and metabolic cardiomyopathy	ICD-9-CM	Diagnosis
425.8	Cardiomyopathy in other diseases classified elsewhere	ICD-9-CM	Diagnosis
425.9	Unspecified secondary cardiomyopathy	ICD-9-CM	Diagnosis
426	Conduction disorders	ICD-9-CM	Diagnosis
426.0	Atrioventricular block, complete	ICD-9-CM	Diagnosis
426.1	Atrioventricular block, other and unspecified	ICD-9-CM	Diagnosis
426.10	Unspecified atrioventricular block	ICD-9-CM	Diagnosis
426.11	First degree atrioventricular block	ICD-9-CM	Diagnosis
426.12	Mobitz (type) II atrioventricular block	ICD-9-CM	Diagnosis
426.13	Other second degree atrioventricular block	ICD-9-CM	Diagnosis
426.2	Left bundle branch hemiblock	ICD-9-CM	Diagnosis
426.3	Other left bundle branch block	ICD-9-CM	Diagnosis
426.4	Right bundle branch block	ICD-9-CM	Diagnosis
426.5	Bundle branch block, other and unspecified	ICD-9-CM	Diagnosis
426.50	Unspecified bundle branch block	ICD-9-CM	Diagnosis
426.51	Right bundle branch block and left posterior fascicular block	ICD-9-CM	Diagnosis
426.52	Right bundle branch block and left anterior fascicular block	ICD-9-CM	Diagnosis
426.53	Other bilateral bundle branch block	ICD-9-CM	Diagnosis
426.54	Trifascicular block	ICD-9-CM	Diagnosis
426.6	Other heart block	ICD-9-CM	Diagnosis
426.7	Anomalous atrioventricular excitation	ICD-9-CM	Diagnosis
426.8	Other specified conduction disorders	ICD-9-CM	Diagnosis
426.81	Lown-Ganong-Levine syndrome	ICD-9-CM	Diagnosis
426.82	Long QT syndrome	ICD-9-CM	Diagnosis
426.89	Other specified conduction disorder	ICD-9-CM	Diagnosis
426.9	Unspecified conduction disorder	ICD-9-CM	Diagnosis
427	Cardiac dysrhythmias	ICD-9-CM	Diagnosis
427.0	Paroxysmal supraventricular tachycardia	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
427.1	Paroxysmal ventricular tachycardia	ICD-9-CM	Diagnosis
427.2	Unspecified paroxysmal tachycardia	ICD-9-CM	Diagnosis
427.3	Atrial fibrillation and flutter	ICD-9-CM	Diagnosis
427.31	Atrial fibrillation	ICD-9-CM	Diagnosis
427.32	Atrial flutter	ICD-9-CM	Diagnosis
427.4	Ventricular fibrillation and flutter	ICD-9-CM	Diagnosis
427.41	Ventricular fibrillation	ICD-9-CM	Diagnosis
427.42	Ventricular flutter	ICD-9-CM	Diagnosis
427.5	Cardiac arrest	ICD-9-CM	Diagnosis
427.6	Premature beats	ICD-9-CM	Diagnosis
427.60	Unspecified premature beats	ICD-9-CM	Diagnosis
427.61	Supraventricular premature beats	ICD-9-CM	Diagnosis
427.69	Other premature beats	ICD-9-CM	Diagnosis
427.8	Other specified cardiac dysrhythmias	ICD-9-CM	Diagnosis
427.81	Sinoatrial node dysfunction	ICD-9-CM	Diagnosis
427.89	Other specified cardiac dysrhythmias	ICD-9-CM	Diagnosis
427.9	Unspecified cardiac dysrhythmia	ICD-9-CM	Diagnosis
429	Ill-defined descriptions and complications of heart disease	ICD-9-CM	Diagnosis
429.0	Unspecified myocarditis	ICD-9-CM	Diagnosis
429.1	Myocardial degeneration	ICD-9-CM	Diagnosis
429.2	Unspecified cardiovascular disease	ICD-9-CM	Diagnosis
429.3	Cardiomegaly	ICD-9-CM	Diagnosis
429.4	Functional disturbances following cardiac surgery	ICD-9-CM	Diagnosis
429.5	Rupture of chordae tendineae	ICD-9-CM	Diagnosis
429.6	Rupture of papillary muscle	ICD-9-CM	Diagnosis
429.7	Certain sequelae of myocardial infarction, not elsewhere classified	ICD-9-CM	Diagnosis
429.71	Acquired cardiac septal defect	ICD-9-CM	Diagnosis
429.79	Other certain sequelae of myocardial infarction, not elsewhere classified	ICD-9-CM	Diagnosis
429.8	Other ill-defined heart diseases	ICD-9-CM	Diagnosis
429.81	Other disorders of papillary muscle	ICD-9-CM	Diagnosis
429.82	Hyperkinetic heart disease	ICD-9-CM	Diagnosis
429.83	Takotsubo syndrome	ICD-9-CM	Diagnosis
429.89	Other ill-defined heart disease	ICD-9-CM	Diagnosis
429.9	Unspecified heart disease	ICD-9-CM	Diagnosis
440	Atherosclerosis	ICD-9-CM	Diagnosis
440.0	Atherosclerosis of aorta	ICD-9-CM	Diagnosis
440.1	Atherosclerosis of renal artery	ICD-9-CM	Diagnosis
440.2	Atherosclerosis of native arteries of the extremities	ICD-9-CM	Diagnosis
440.20	Atherosclerosis of native arteries of the extremities, unspecified	ICD-9-CM	Diagnosis
440.21	Atherosclerosis of native arteries of the extremities with intermittent claudication	ICD-9-CM	Diagnosis
440.22	Atherosclerosis of native arteries of the extremities with rest pain	ICD-9-CM	Diagnosis
440.23	Atherosclerosis of native arteries of the extremities with ulceration	ICD-9-CM	Diagnosis
440.24	Atherosclerosis of native arteries of the extremities with gangrene	ICD-9-CM	Diagnosis
440.29	Other atherosclerosis of native arteries of the extremities	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
440.3	Atherosclerosis of bypass graft of extremities	ICD-9-CM	Diagnosis
440.30	Atherosclerosis of unspecified bypass graft of extremities	ICD-9-CM	Diagnosis
440.31	Atherosclerosis of autologous vein bypass graft of extremities	ICD-9-CM	Diagnosis
440.32	Atherosclerosis of nonautologous biological bypass graft of extremities	ICD-9-CM	Diagnosis
440.4	Chronic total occlusion of artery of the extremities	ICD-9-CM	Diagnosis
440.8	Atherosclerosis of other specified arteries	ICD-9-CM	Diagnosis
440.9	Generalized and unspecified atherosclerosis	ICD-9-CM	Diagnosis
	Stroke (Broad Definition)		
430	Subarachnoid hemorrhage	ICD-9-CM	Diagnosis
431	Intracerebral hemorrhage	ICD-9-CM	Diagnosis
432	Other and unspecified intracranial hemorrhage	ICD-9-CM	Diagnosis
432.0	Nontraumatic extradural hemorrhage	ICD-9-CM	Diagnosis
432.1	Subdural hemorrhage	ICD-9-CM	Diagnosis
432.9	Unspecified intracranial hemorrhage	ICD-9-CM	Diagnosis
433	Occlusion and stenosis of precerebral arteries	ICD-9-CM	Diagnosis
433.0	Occlusion and stenosis of basilar artery	ICD-9-CM	Diagnosis
433.00	Occlusion and stenosis of basilar artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.01	Occlusion and stenosis of basilar artery with cerebral infarction	ICD-9-CM	Diagnosis
433.1	Occlusion and stenosis of carotid artery	ICD-9-CM	Diagnosis
433.10	Occlusion and stenosis of carotid artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.11	Occlusion and stenosis of carotid artery with cerebral infarction	ICD-9-CM	Diagnosis
433.2	Occlusion and stenosis of vertebral artery	ICD-9-CM	Diagnosis
433.20	Occlusion and stenosis of vertebral artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.3	Occlusion and stenosis of multiple and bilateral precerebral arteries	ICD-9-CM	Diagnosis
433.30	Occlusion and stenosis of multiple and bilateral precerebral arteries without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.31	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction	ICD-9-CM	Diagnosis
433.8	Occlusion and stenosis of other specified precerebral artery	ICD-9-CM	Diagnosis
433.80	Occlusion and stenosis of other specified precerebral artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.81	Occlusion and stenosis of other specified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.9	Occlusion and stenosis of unspecified precerebral artery	ICD-9-CM	Diagnosis
433.90	Occlusion and stenosis of unspecified precerebral artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.91	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
434	Occlusion of cerebral arteries	ICD-9-CM	Diagnosis
434.0	Cerebral thrombosis	ICD-9-CM	Diagnosis
434.00	Cerebral thrombosis without mention of cerebral infarction	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
434.01	Cerebral thrombosis with cerebral infarction	ICD-9-CM	Diagnosis
434.1	Cerebral embolism	ICD-9-CM	Diagnosis
434.10	Cerebral embolism without mention of cerebral infarction	ICD-9-CM	Diagnosis
434.11	Cerebral embolism with cerebral infarction	ICD-9-CM	Diagnosis
434.9	Unspecified cerebral artery occlusion	ICD-9-CM	Diagnosis
434.90	Unspecified cerebral artery occlusion without mention of cerebral infarction	ICD-9-CM	Diagnosis
434.91	Unspecified cerebral artery occlusion with cerebral infarction	ICD-9-CM	Diagnosis
436	Acute, but ill-defined, cerebrovascular disease	ICD-9-CM	Diagnosis
	Stroke (Narrow Definition)		
430	Subarachnoid hemorrhage	ICD-9-CM	Diagnosis
431	Intracerebral hemorrhage	ICD-9-CM	Diagnosis
433.01	Occlusion and stenosis of basilar artery with cerebral infarction	ICD-9-CM	Diagnosis
433.11	Occlusion and stenosis of carotid artery with cerebral infarction	ICD-9-CM	Diagnosis
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.31	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction	ICD-9-CM	Diagnosis
433.81	Occlusion and stenosis of other specified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.91	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
434.01	Cerebral thrombosis with cerebral infarction	ICD-9-CM	Diagnosis
434.11	Cerebral embolism with cerebral infarction	ICD-9-CM	Diagnosis
434.91	Unspecified cerebral artery occlusion with cerebral infarction	ICD-9-CM	Diagnosis
436	Acute, but ill-defined, cerebrovascular disease	ICD-9-CM	Diagnosis
	Peripheral Arterial Disease		
443.9	Unspecified peripheral vascular disease	ICD-9-CM	Diagnosis
	Coronary Revascularization Procedure		
	Coronary Artery Bypass Graft		
33510	Coronary artery bypass, vein only; single coronary venous graft	CPT-4	Procedure
33511	Coronary artery bypass, vein only; 2 coronary venous grafts	CPT-4	Procedure
33512	Coronary artery bypass, vein only; 3 coronary venous grafts	CPT-4	Procedure
33513	Coronary artery bypass, vein only; 4 coronary venous grafts	CPT-4	Procedure
33514	Coronary artery bypass, vein only; 5 coronary venous grafts	CPT-4	Procedure
33516	Coronary artery bypass, vein only; 6 or more coronary venous grafts	CPT-4	Procedure
33517	Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure)	CPT-4	Procedure
33518	Coronary artery bypass, using venous graft(s) and arterial graft(s); 2 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
33519	Coronary artery bypass, using venous graft(s) and arterial graft(s); 3 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
3351F	Negative screen for depressive symptoms as categorized by using a standardized depression screening/assessment tool (MDD)	CPT-2	Procedure
33520	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Single Graft	CPT-4	Procedure

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Code	Description	Code Type	Code Category
33521	Coronary artery bypass, using venous graft(s) and arterial graft(s); 4 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
33522	Coronary artery bypass, using venous graft(s) and arterial graft(s); 5 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
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)	CPT-4	Procedure
33525	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Two Coronary Grafts	CPT-4	Procedure
33528	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Three Or More Coronary Grafts	CPT-4	Procedure
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)	CPT-4	Procedure
33533	Coronary artery bypass, using arterial graft(s); single arterial graft	CPT-4	Procedure
33534	Coronary artery bypass, using arterial graft(s); 2 coronary arterial grafts	CPT-4	Procedure
33535	Coronary artery bypass, using arterial graft(s); 3 coronary arterial grafts	CPT-4	Procedure
33536	Coronary artery bypass, using arterial graft(s); 4 or more coronary arterial grafts	CPT-4	Procedure
33560	Myocardial Operation Combined With Coronary Bypass Procedure	CPT-4	Procedure
33570	CORONARY ANGIOPLASTY W/BYPASS	CPT-4	Procedure
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)	CPT-4	Procedure
33575	CORON ANGIOPLSTY W/BYPASS; COMBO W/VASCULARIZAT	CPT-4	Procedure
35600	Harvest of upper extremity artery, 1 segment, for coronary artery bypass procedure (List separately in addition to code for primary procedure)	CPT-4	Procedure
36.10	Aortocoronary bypass for heart revascularization, not otherwise specified	ICD-9-CM	Procedure
36.11	(Aorto)coronary bypass of one coronary artery	ICD-9-CM	Procedure
36.12	(Aorto)coronary bypass of two coronary arteries	ICD-9-CM	Procedure
36.13	(Aorto)coronary bypass of three coronary arteries	ICD-9-CM	Procedure
36.14	(Aorto)coronary bypass of four or more coronary arteries	ICD-9-CM	Procedure
36.15	Single internal mammary-coronary artery bypass	ICD-9-CM	Procedure
36.16	Double internal mammary-coronary artery bypass	ICD-9-CM	Procedure
36.17	Abdominal-coronary artery bypass	ICD-9-CM	Procedure
36.19	Other bypass anastomosis for heart revascularization	ICD-9-CM	Procedure
36.2	Heart revascularization by arterial implant	ICD-9-CM	Procedure
996.03	Mechanical complication due to coronary bypass graft	ICD-9-CM	Diagnosis
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	HCPCS	Procedure

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Code	Description	Code Type	Code Category
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	HCPCS	Procedure
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	HCPCS	Procedure
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	HCPCS	Procedure
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	HCPCS	Procedure
V45.81	Postprocedural aortocoronary bypass status	ICD-9-CM	Diagnosis
	Percutaneous Coronary Intervention		
00.66	Percutaneous transluminal coronary angioplasty [PTCA]	ICD-9-CM	Procedure
17.55	Transluminal coronary atherectomy	ICD-9-CM	Procedure
36.01	Single vessel percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy without mention of thrombolytic agent	ICD-9-CM	Procedure
36.02	Single vessel percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy with thrombolytic agent	ICD-9-CM	Procedure
36.03	Open chest coronary artery angioplasty	ICD-9-CM	Procedure
36.04	Intracoronary artery thrombolytic infusion	ICD-9-CM	Procedure
36.05	Multiple vessel (percutaneous) transluminal coronary angioplasty [PTCA] or coronary atherectomy performed during the same operation, with or without mention of thrombolytic agent	ICD-9-CM	Procedure
36.06	Insertion of non-drug-eluting coronary artery stent(s)	ICD-9-CM	Procedure
36.07	Insertion of drug-eluting coronary artery stent(s)	ICD-9-CM	Procedure
36.09	Other removal of coronary artery obstruction	ICD-9-CM	Procedure
37.22	Left heart cardiac catheterization	ICD-9-CM	Procedure
37.23	Combined right and left heart cardiac catheterization	ICD-9-CM	Procedure
88.50	Angiocardiography, not otherwise specified	ICD-9-CM	Procedure
88.51	Angiocardiography of venae cavae	ICD-9-CM	Procedure
88.52	Angiocardiography of right heart structures	ICD-9-CM	Procedure
88.53	Angiocardiography of left heart structures	ICD-9-CM	Procedure
88.54	Combined right and left heart angiocardiography	ICD-9-CM	Procedure
88.55	Coronary arteriography using single catheter	ICD-9-CM	Procedure
88.56	Coronary arteriography using two catheters	ICD-9-CM	Procedure
88.57	Other and unspecified coronary arteriography	ICD-9-CM	Procedure
88.58	Negative-contrast cardiac roentgenography	ICD-9-CM	Procedure
88.59	Intra-operative coronary fluorescence vascular angiography	ICD-9-CM	Procedure
92973	Percutaneous transluminal coronary thrombectomy mechanical (List separately in addition to code for primary procedure)	CPT-4	Procedure
92974	Transcatheter placement of radiation delivery device for subsequent coronary intravascular brachytherapy (List separately in addition to code for primary procedure)	CPT-4	Procedure

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Code	Description	Code Type	Code Category
92977	Thrombolysis, coronary; by intravenous infusion	CPT-4	Procedure
92980	Transcatheter placement of an intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel	CPT-4	Procedure
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)	CPT-4	Procedure
92982	Percutaneous transluminal coronary balloon angioplasty; single vessel	CPT-4	Procedure
92984	Percutaneous transluminal coronary balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)	CPT-4	Procedure
92987	Percutaneous balloon valvuloplasty; mitral valve	CPT-4	Procedure
92995	Percutaneous transluminal coronary atherectomy, by mechanical or other method, with or without balloon angioplasty; single vessel	CPT-4	Procedure
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)	CPT-4	Procedure
G0290	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel	HCPCS	Procedure
G0291	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; each additional vessel	HCPCS	Procedure
V45.82	Postprocedural percutaneous transluminal coronary angioplasty status	ICD-9-CM	Diagnosis
	Carotid Revascularization Procedure		
	Carotid Endarterectomy, Stenting, Angioplasty or Atherectomy		
00.61	Percutaneous angioplasty of extracranial vessel(s)	ICD-9-CM	Procedure
00.63	Percutaneous insertion of carotid artery stent(s)	ICD-9-CM	Procedure
0075T	Transcatheter placement of extracranial vertebral artery stent(s), including radiologic supervision and interpretation, open or percutaneous; initial vessel	CPT Category III	Procedure
0076T	Transcatheter placement of extracranial vertebral artery stent(s), including radiologic supervision and interpretation, open or percutaneous; each additional vessel (List separately in addition to code for primary procedure)	CPT Category III	Procedure
35301	Thromboendarterectomy, including patch graft, if performed; carotid, vertebral, subclavian, by neck incision	CPT-4	Procedure
35390	Reoperation, carotid, thromboendarterectomy, more than 1 month after original operation (List separately in addition to code for primary procedure)	CPT-4	Procedure
35501	Bypass graft, with vein; common carotid-ipsilateral internal carotid	CPT-4	Procedure
35601	Bypass graft, with other than vein; common carotid-ipsilateral internal carotid	CPT-4	Procedure
35901	Excision of infected graft; neck	CPT-4	Procedure

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Code	Description	Code Type	Code Category
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	CPT-4	Procedure
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	CPT-4	Procedure
38.11	Endarterectomy of intracranial vessels	ICD-9-CM	Procedure
38.12	Endarterectomy of other vessels of head and neck	ICD-9-CM	Procedure
S2211	Transcatheter placement of intravascular stent(s), carotid artery, percutaneous, unilateral (if performed bilaterally, use-50 modifier)	HCPCS	Procedure
	Carotid Bypass		
39.28	Extracranial-intracranial (EC-IC) vascular bypass	ICD-9-CM	Procedure
	Lower Extremity Revascularization Procedure		
	Lower Extremity Endarterectomy, Stenting, Angioplasty or Artherectomy		
35454	Transluminal balloon angioplasty, open; iliac	CPT-4	Procedure
35456	Transluminal balloon angioplasty, open; femoral-popliteal	CPT-4	Procedure
35459	Transluminal balloon angioplasty, open; tibioperoneal trunk and branches	CPT-4	Procedure
35470	Transluminal balloon angioplasty, percutaneous; tibioperoneal trunk or branches, each vessel	CPT-4	Procedure
35473	Transluminal balloon angioplasty, percutaneous; iliac	CPT-4	Procedure
35474	Transluminal balloon angioplasty, percutaneous; femoral-popliteal	CPT-4	Procedure
35482	Transluminal peripheral atherectomy, open; iliac	CPT-4	Procedure
35483	Transluminal peripheral atherectomy, open; femoral-popliteal	CPT-4	Procedure
35492	Transluminal peripheral atherectomy, percutaneous; iliac	CPT-4	Procedure
35493	Transluminal peripheral atherectomy, percutaneous; femoral-popliteal	CPT-4	Procedure
35495	Transluminal peripheral atherectomy, percutaneous; tibioperoneal trunk and branches	CPT-4	Procedure
37207	Transcatheter placement of an intravascular stent(s) (except coronary, carotid, vertebral, iliac and lower extremity arteries), open; initial vessel	CPT-4	Procedure
37208	Transcatheter placement of an intravascular stent(s) (except coronary, carotid, vertebral, iliac and lower extremity arteries), open; each additional vessel (List separately in addition to code for primary procedure)	CPT-4	Procedure
37220	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal angioplasty	CPT-4	Procedure
37221	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	CPT-4	Procedure
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)	CPT-4	Procedure

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Code	Description	Code Type	Code Category
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)	CPT-4	Procedure
37224	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal angioplasty	CPT-4	Procedure
37225	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with atherectomy, includes angioplasty within the same vessel, when performed	CPT-4	Procedure
37226	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	CPT-4	Procedure
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	CPT-4	Procedure
37228	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal angioplasty	CPT-4	Procedure
37229	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with atherectomy, includes angioplasty within the same vessel, when performed	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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)	CPT-4	Procedure
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)	CPT-4	Procedure
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)	CPT-4	Procedure
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)	CPT-4	Procedure
38.10	Endarterectomy, unspecified site	ICD-9-CM	Procedure

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Code	Description	Code Type	Code Category
38.18	Endarterectomy of lower limb arteries	ICD-9-CM	Procedure
	Lower Extremity Bypass		
35666	Bypass graft, with other than vein; femoral-anterior tibial, posterior tibial, or peroneal artery	CPT-4	Procedure
35351	Thromboendarterectomy, including patch graft, if performed; iliac	CPT-4	Procedure
35355	Thromboendarterectomy, including patch graft, if performed; iliofemoral	CPT-4	Procedure
35361	Thromboendarterectomy, including patch graft, if performed; combined aortoiliac	CPT-4	Procedure
35363	Thromboendarterectomy, including patch graft, if performed; combined aortoiliofemoral	CPT-4	Procedure
35371	Thromboendarterectomy, including patch graft, if performed; common femoral	CPT-4	Procedure
35372	Thromboendarterectomy, including patch graft, if performed; deep (profunda) femoral	CPT-4	Procedure
35521	Bypass graft, with vein; axillary-femoral	CPT-4	Procedure
35533	Bypass graft, with vein; axillary-femoral-femoral	CPT-4	Procedure
35541	Bypass graft, with vein; aortoiliac or bi-iliac	CPT-4	Procedure
35546	Bypass graft, with vein; aortofemoral or bifemoral	CPT-4	Procedure
35548	Bypass graft, with vein; aortoiliofemoral, unilateral	CPT-4	Procedure
35549	Bypass graft, with vein; aortoiliofemoral, bilateral	CPT-4	Procedure
35551	Bypass graft, with vein; aortofemoral-popliteal	CPT-4	Procedure
35556	Bypass graft, with vein; femoral-popliteal	CPT-4	Procedure
35558	Bypass graft, with vein; femoral-femoral	CPT-4	Procedure
35563	Bypass graft, with vein; ilioiliac	CPT-4	Procedure
35565	Bypass graft, with vein; iliofemoral	CPT-4	Procedure
35566	Bypass graft, with vein; femoral-anterior tibial, posterior tibial, peroneal artery or other distal vessels	CPT-4	Procedure
35570	Bypass graft, with vein; tibial-tibial, peroneal-tibial, or tibial/peroneal trunk-tibial	CPT-4	Procedure
35571	Bypass graft, with vein; popliteal-tibial, -peroneal artery or other distal vessels	CPT-4	Procedure
35582	In-situ vein bypass; aortofemoral-popliteal (only femoral-popliteal portion in-situ)	CPT-4	Procedure
35583	In-situ vein bypass; femoral-popliteal	CPT-4	Procedure
35585	In-situ vein bypass; femoral-anterior tibial, posterior tibial, or peroneal artery	CPT-4	Procedure
35587	In-situ vein bypass; popliteal-tibial, peroneal	CPT-4	Procedure
35621	Bypass graft, with other than vein; axillary-femoral	CPT-4	Procedure
35623	Bypass graft, with other than vein; axillary-popliteal or -tibial	CPT-4	Procedure
35637	Bypass graft, with other than vein; aortoiliac	CPT-4	Procedure
35638	Bypass graft, with other than vein; aortobi-iliac	CPT-4	Procedure
35641	Bypass graft, with other than vein; aortoiliac or bi-iliac	CPT-4	Procedure
35646	Bypass graft, with other than vein; aortobifemoral	CPT-4	Procedure
35647	Bypass graft, with other than vein; aortofemoral	CPT-4	Procedure
35651	Bypass graft, with other than vein; aortofemoral-popliteal	CPT-4	Procedure

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Code	Description	Code Type	Code Category
35654	Bypass graft, with other than vein; axillary-femoral-femoral	CPT-4	Procedure
35656	Bypass graft, with other than vein; femoral-popliteal	CPT-4	Procedure
35661	Bypass graft, with other than vein; femoral-femoral	CPT-4	Procedure
35663	Bypass graft, with other than vein; ilioiliac	CPT-4	Procedure
35665	Bypass graft, with other than vein; iliofemoral	CPT-4	Procedure
35671	Bypass graft, with other than vein; popliteal-tibial or -peroneal artery	CPT-4	Procedure
35681	Bypass graft; composite, prosthetic and vein (List separately in addition to code for primary procedure)	CPT-4	Procedure
35682	Bypass graft; autogenous composite, 2 segments of veins from 2 locations (List separately in addition to code for primary procedure)	CPT-4	Procedure
35683	Bypass graft; autogenous composite, 3 or more segments of vein from 2 or more locations (List separately in addition to code for primary procedure)	CPT-4	Procedure
35879	Revision, lower extremity arterial bypass, without thrombectomy, open; with vein patch angioplasty	CPT-4	Procedure
39.25	Aorta-iliac-femoral bypass	ICD-9-CM	Procedure
39.29	Other (peripheral) vascular shunt or bypass	ICD-9-CM	Procedure
	Lower Extremity Amputation		
27295	Disarticulation of hip	CPT-4	Procedure
27590	Amputation, thigh, through femur, any level;	CPT-4	Procedure
27591	Amputation, thigh, through femur, any level; immediate fitting technique including first cast	CPT-4	Procedure
27592	Amputation, thigh, through femur, any level; open, circular (guillotine)	CPT-4	Procedure
27598	Disarticulation at knee	CPT-4	Procedure
27880	Amputation, leg, through tibia and fibula;	CPT-4	Procedure
27881	Amputation, leg, through tibia and fibula; with immediate fitting technique including application of first cast	CPT-4	Procedure
27882	Amputation, leg, through tibia and fibula; open, circular (guillotine)	CPT-4	Procedure
27888	Amputation, ankle, through malleoli of tibia and fibula (eg, Syme, Pirogoff type procedures), with plastic closure and resection of nerves	CPT-4	Procedure
27889	Ankle disarticulation	CPT-4	Procedure
28800	Amputation, foot; midtarsal (eg, Chopart type procedure)	CPT-4	Procedure
28805	Amputation, foot; transmetatarsal	CPT-4	Procedure
28810	Amputation, metatarsal, with toe, single	CPT-4	Procedure
28820	Amputation, toe; metatarsophalangeal joint	CPT-4	Procedure
28825	Amputation, toe; interphalangeal joint	CPT-4	Procedure
84.10	Lower limb amputation, not otherwise specified	ICD-9-CM	Procedure
84.11	Amputation of toe	ICD-9-CM	Procedure
84.12	Amputation through foot	ICD-9-CM	Procedure
84.13	Disarticulation of ankle	ICD-9-CM	Procedure
84.14	Amputation of ankle through malleoli of tibia and fibula	ICD-9-CM	Procedure
84.15	Other amputation below knee	ICD-9-CM	Procedure
84.16	Disarticulation of knee	ICD-9-CM	Procedure
84.17	Amputation above knee	ICD-9-CM	Procedure
	Comorbidity		

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Code	Description	Code Type	Code Category
	Asthma		
493	Asthma	ICD-9-CM	Diagnosis
493.0	Extrinsic asthma	ICD-9-CM	Diagnosis
493.00	Extrinsic asthma, unspecified	ICD-9-CM	Diagnosis
493.01	Extrinsic asthma with status asthmaticus	ICD-9-CM	Diagnosis
493.02	Extrinsic asthma, with (acute) exacerbation	ICD-9-CM	Diagnosis
493.1	Intrinsic asthma	ICD-9-CM	Diagnosis
493.10	Intrinsic asthma, unspecified	ICD-9-CM	Diagnosis
493.11	Intrinsic asthma with status asthmaticus	ICD-9-CM	Diagnosis
493.12	Intrinsic asthma, with (acute) exacerbation	ICD-9-CM	Diagnosis
493.2	Chronic obstructive asthma	ICD-9-CM	Diagnosis
493.20	Chronic obstructive asthma, unspecified	ICD-9-CM	Diagnosis
493.21	Chronic obstructive asthma with status asthmaticus	ICD-9-CM	Diagnosis
493.22	Chronic obstructive asthma, with (acute) exacerbation	ICD-9-CM	Diagnosis
493.8	Other forms of asthma	ICD-9-CM	Diagnosis
493.81	Exercise induced bronchospasm	ICD-9-CM	Diagnosis
493.82	Cough variant asthma	ICD-9-CM	Diagnosis
493.9	Unspecified asthma	ICD-9-CM	Diagnosis
493.90	Asthma, unspecified, unspecified status	ICD-9-CM	Diagnosis
493.91	Asthma, unspecified with status asthmaticus	ICD-9-CM	Diagnosis
493.92	Asthma, unspecified, with (acute) exacerbation	ICD-9-CM	Diagnosis
	Cancer (Excluding Non-Melanoma Skin Cancer)		
140	Malignant neoplasm of lip	ICD-9-CM	Diagnosis
140.0	Malignant neoplasm of upper lip, vermilion border	ICD-9-CM	Diagnosis
140.1	Malignant neoplasm of lower lip, vermilion border	ICD-9-CM	Diagnosis
140.3	Malignant neoplasm of upper lip, inner aspect	ICD-9-CM	Diagnosis
140.4	Malignant neoplasm of lower lip, inner aspect	ICD-9-CM	Diagnosis
140.5	Malignant neoplasm of lip, inner aspect, unspecified as to upper or lower	ICD-9-CM	Diagnosis
140.6	Malignant neoplasm of commissure of lip	ICD-9-CM	Diagnosis
140.8	Malignant neoplasm of other sites of lip	ICD-9-CM	Diagnosis
140.9	Malignant neoplasm of lip, vermilion border, unspecified as to upper or lower	ICD-9-CM	Diagnosis
141	Malignant neoplasm of tongue	ICD-9-CM	Diagnosis
141.0	Malignant neoplasm of base of tongue	ICD-9-CM	Diagnosis
141.1	Malignant neoplasm of dorsal surface of tongue	ICD-9-CM	Diagnosis
141.2	Malignant neoplasm of tip and lateral border of tongue	ICD-9-CM	Diagnosis
141.3	Malignant neoplasm of ventral surface of tongue	ICD-9-CM	Diagnosis
141.4	Malignant neoplasm of anterior two-thirds of tongue, part unspecified	ICD-9-CM	Diagnosis
141.5	Malignant neoplasm of junctional zone of tongue	ICD-9-CM	Diagnosis
141.6	Malignant neoplasm of lingual tonsil	ICD-9-CM	Diagnosis
141.8	Malignant neoplasm of other sites of tongue	ICD-9-CM	Diagnosis
141.9	Malignant neoplasm of tongue, unspecified site	ICD-9-CM	Diagnosis
142	Malignant neoplasm of major salivary glands	ICD-9-CM	Diagnosis
142.0	Malignant neoplasm of parotid gland	ICD-9-CM	Diagnosis
142.1	Malignant neoplasm of submandibular gland	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
142.2	Malignant neoplasm of sublingual gland	ICD-9-CM	Diagnosis
142.8	Malignant neoplasm of other major salivary glands	ICD-9-CM	Diagnosis
142.9	Malignant neoplasm of salivary gland, unspecified	ICD-9-CM	Diagnosis
143	Malignant neoplasm of gum	ICD-9-CM	Diagnosis
143.0	Malignant neoplasm of upper gum	ICD-9-CM	Diagnosis
143.1	Malignant neoplasm of lower gum	ICD-9-CM	Diagnosis
143.8	Malignant neoplasm of other sites of gum	ICD-9-CM	Diagnosis
143.9	Malignant neoplasm of gum, unspecified site	ICD-9-CM	Diagnosis
144	Malignant neoplasm of floor of mouth	ICD-9-CM	Diagnosis
144.0	Malignant neoplasm of anterior portion of floor of mouth	ICD-9-CM	Diagnosis
144.1	Malignant neoplasm of lateral portion of floor of mouth	ICD-9-CM	Diagnosis
144.8	Malignant neoplasm of other sites of floor of mouth	ICD-9-CM	Diagnosis
144.9	Malignant neoplasm of floor of mouth, part unspecified	ICD-9-CM	Diagnosis
145	Malignant neoplasm of other and unspecified parts of mouth	ICD-9-CM	Diagnosis
145.0	Malignant neoplasm of cheek mucosa	ICD-9-CM	Diagnosis
145.1	Malignant neoplasm of vestibule of mouth	ICD-9-CM	Diagnosis
145.2	Malignant neoplasm of hard palate	ICD-9-CM	Diagnosis
145.3	Malignant neoplasm of soft palate	ICD-9-CM	Diagnosis
145.4	Malignant neoplasm of uvula	ICD-9-CM	Diagnosis
145.5	Malignant neoplasm of palate, unspecified	ICD-9-CM	Diagnosis
145.6	Malignant neoplasm of retromolar area	ICD-9-CM	Diagnosis
145.8	Malignant neoplasm of other specified parts of mouth	ICD-9-CM	Diagnosis
145.9	Malignant neoplasm of mouth, unspecified site	ICD-9-CM	Diagnosis
146	Malignant neoplasm of oropharynx	ICD-9-CM	Diagnosis
146.0	Malignant neoplasm of tonsil	ICD-9-CM	Diagnosis
146.1	Malignant neoplasm of tonsillar fossa	ICD-9-CM	Diagnosis
146.2	Malignant neoplasm of tonsillar pillars (anterior) (posterior)	ICD-9-CM	Diagnosis
146.3	Malignant neoplasm of vallecula	ICD-9-CM	Diagnosis
146.4	Malignant neoplasm of anterior aspect of epiglottis	ICD-9-CM	Diagnosis
146.5	Malignant neoplasm of junctional region of oropharynx	ICD-9-CM	Diagnosis
146.6	Malignant neoplasm of lateral wall of oropharynx	ICD-9-CM	Diagnosis
146.7	Malignant neoplasm of posterior wall of oropharynx	ICD-9-CM	Diagnosis
146.8	Malignant neoplasm of other specified sites of oropharynx	ICD-9-CM	Diagnosis
146.9	Malignant neoplasm of oropharynx, unspecified site	ICD-9-CM	Diagnosis
147	Malignant neoplasm of nasopharynx	ICD-9-CM	Diagnosis
147.0	Malignant neoplasm of superior wall of nasopharynx	ICD-9-CM	Diagnosis
147.1	Malignant neoplasm of posterior wall of nasopharynx	ICD-9-CM	Diagnosis
147.2	Malignant neoplasm of lateral wall of nasopharynx	ICD-9-CM	Diagnosis
147.3	Malignant neoplasm of anterior wall of nasopharynx	ICD-9-CM	Diagnosis
147.8	Malignant neoplasm of other specified sites of nasopharynx	ICD-9-CM	Diagnosis
147.9	Malignant neoplasm of nasopharynx, unspecified site	ICD-9-CM	Diagnosis
148	Malignant neoplasm of hypopharynx	ICD-9-CM	Diagnosis
148.0	Malignant neoplasm of postcricoid region of hypopharynx	ICD-9-CM	Diagnosis
148.1	Malignant neoplasm of pyriform sinus	ICD-9-CM	Diagnosis
148.2	Malignant neoplasm of aryepiglottic fold, hypopharyngeal aspect	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
148.3	Malignant neoplasm of posterior hypopharyngeal wall	ICD-9-CM	Diagnosis
148.8	Malignant neoplasm of other specified sites of hypopharynx	ICD-9-CM	Diagnosis
148.9	Malignant neoplasm of hypopharynx, unspecified site	ICD-9-CM	Diagnosis
149	Malignant neoplasm of other and ill-defined sites within the lip, oral cavity, and pharynx	ICD-9-CM	Diagnosis
149.0	Malignant neoplasm of pharynx, unspecified	ICD-9-CM	Diagnosis
149.1	Malignant neoplasm of Waldeyer's ring	ICD-9-CM	Diagnosis
149.8	Malignant neoplasm of other sites within the lip and oral cavity	ICD-9-CM	Diagnosis
149.9	Malignant neoplasm of ill-defined sites of lip and oral cavity	ICD-9-CM	Diagnosis
150	Malignant neoplasm of esophagus	ICD-9-CM	Diagnosis
150.0	Malignant neoplasm of cervical esophagus	ICD-9-CM	Diagnosis
150.1	Malignant neoplasm of thoracic esophagus	ICD-9-CM	Diagnosis
150.2	Malignant neoplasm of abdominal esophagus	ICD-9-CM	Diagnosis
150.3	Malignant neoplasm of upper third of esophagus	ICD-9-CM	Diagnosis
150.4	Malignant neoplasm of middle third of esophagus	ICD-9-CM	Diagnosis
150.5	Malignant neoplasm of lower third of esophagus	ICD-9-CM	Diagnosis
150.8	Malignant neoplasm of other specified part of esophagus	ICD-9-CM	Diagnosis
150.9	Malignant neoplasm of esophagus, unspecified site	ICD-9-CM	Diagnosis
151	Malignant neoplasm of stomach	ICD-9-CM	Diagnosis
151.0	Malignant neoplasm of cardia	ICD-9-CM	Diagnosis
151.1	Malignant neoplasm of pylorus	ICD-9-CM	Diagnosis
151.2	Malignant neoplasm of pyloric antrum	ICD-9-CM	Diagnosis
151.3	Malignant neoplasm of fundus of stomach	ICD-9-CM	Diagnosis
151.4	Malignant neoplasm of body of stomach	ICD-9-CM	Diagnosis
151.5	Malignant neoplasm of lesser curvature of stomach, unspecified	ICD-9-CM	Diagnosis
151.6	Malignant neoplasm of greater curvature of stomach, unspecified	ICD-9-CM	Diagnosis
151.8	Malignant neoplasm of other specified sites of stomach	ICD-9-CM	Diagnosis
151.9	Malignant neoplasm of stomach, unspecified site	ICD-9-CM	Diagnosis
152	Malignant neoplasm of small intestine, including duodenum	ICD-9-CM	Diagnosis
152.0	Malignant neoplasm of duodenum	ICD-9-CM	Diagnosis
152.1	Malignant neoplasm of jejunum	ICD-9-CM	Diagnosis
152.2	Malignant neoplasm of ileum	ICD-9-CM	Diagnosis
152.3	Malignant neoplasm of Meckel's diverticulum	ICD-9-CM	Diagnosis
152.8	Malignant neoplasm of other specified sites of small intestine	ICD-9-CM	Diagnosis
152.9	Malignant neoplasm of small intestine, unspecified site	ICD-9-CM	Diagnosis
153	Malignant neoplasm of colon	ICD-9-CM	Diagnosis
153.0	Malignant neoplasm of hepatic flexure	ICD-9-CM	Diagnosis
153.1	Malignant neoplasm of transverse colon	ICD-9-CM	Diagnosis
153.2	Malignant neoplasm of descending colon	ICD-9-CM	Diagnosis
153.3	Malignant neoplasm of sigmoid colon	ICD-9-CM	Diagnosis
153.4	Malignant neoplasm of cecum	ICD-9-CM	Diagnosis
153.5	Malignant neoplasm of appendix	ICD-9-CM	Diagnosis
153.6	Malignant neoplasm of ascending colon	ICD-9-CM	Diagnosis
153.7	Malignant neoplasm of splenic flexure	ICD-9-CM	Diagnosis
153.8	Malignant neoplasm of other specified sites of large intestine	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
153.9	Malignant neoplasm of colon, unspecified site	ICD-9-CM	Diagnosis
154	Malignant neoplasm of rectum, rectosigmoid junction, and anus	ICD-9-CM	Diagnosis
154.0	Malignant neoplasm of rectosigmoid junction	ICD-9-CM	Diagnosis
154.1	Malignant neoplasm of rectum	ICD-9-CM	Diagnosis
154.2	Malignant neoplasm of anal canal	ICD-9-CM	Diagnosis
154.3	Malignant neoplasm of anus, unspecified site	ICD-9-CM	Diagnosis
154.8	Malignant neoplasm of other sites of rectum, rectosigmoid junction, and anus	ICD-9-CM	Diagnosis
155	Malignant neoplasm of liver and intrahepatic bile ducts	ICD-9-CM	Diagnosis
155.0	Malignant neoplasm of liver, primary	ICD-9-CM	Diagnosis
155.1	Malignant neoplasm of intrahepatic bile ducts	ICD-9-CM	Diagnosis
155.2	Malignant neoplasm of liver, not specified as primary or secondary	ICD-9-CM	Diagnosis
156	Malignant neoplasm of gallbladder and extrahepatic bile ducts	ICD-9-CM	Diagnosis
156.0	Malignant neoplasm of gallbladder	ICD-9-CM	Diagnosis
156.1	Malignant neoplasm of extrahepatic bile ducts	ICD-9-CM	Diagnosis
156.2	Malignant neoplasm of ampulla of Vater	ICD-9-CM	Diagnosis
156.8	Malignant neoplasm of other specified sites of gallbladder and extrahepatic bile ducts	ICD-9-CM	Diagnosis
156.9	Malignant neoplasm of biliary tract, part unspecified site	ICD-9-CM	Diagnosis
157	Malignant neoplasm of pancreas	ICD-9-CM	Diagnosis
157.0	Malignant neoplasm of head of pancreas	ICD-9-CM	Diagnosis
157.1	Malignant neoplasm of body of pancreas	ICD-9-CM	Diagnosis
157.2	Malignant neoplasm of tail of pancreas	ICD-9-CM	Diagnosis
157.3	Malignant neoplasm of pancreatic duct	ICD-9-CM	Diagnosis
157.4	Malignant neoplasm of islets of Langerhans	ICD-9-CM	Diagnosis
157.8	Malignant neoplasm of other specified sites of pancreas	ICD-9-CM	Diagnosis
157.9	Malignant neoplasm of pancreas, part unspecified	ICD-9-CM	Diagnosis
158	Malignant neoplasm of retroperitoneum and peritoneum	ICD-9-CM	Diagnosis
158.0	Malignant neoplasm of retroperitoneum	ICD-9-CM	Diagnosis
158.8	Malignant neoplasm of specified parts of peritoneum	ICD-9-CM	Diagnosis
158.9	Malignant neoplasm of peritoneum, unspecified	ICD-9-CM	Diagnosis
159	Malignant neoplasm of other and ill-defined sites within the digestive organs and peritoneum	ICD-9-CM	Diagnosis
159.0	Malignant neoplasm of intestinal tract, part unspecified	ICD-9-CM	Diagnosis
159.1	Malignant neoplasm of spleen, not elsewhere classified	ICD-9-CM	Diagnosis
159.8	Malignant neoplasm of other sites of digestive system and intra-abdominal organs	ICD-9-CM	Diagnosis
159.9	Malignant neoplasm of ill-defined sites of digestive organs and peritoneum	ICD-9-CM	Diagnosis
160	Malignant neoplasm of nasal cavities, middle ear, and accessory sinuses	ICD-9-CM	Diagnosis
160.0	Malignant neoplasm of nasal cavities	ICD-9-CM	Diagnosis
160.1	Malignant neoplasm of auditory tube, middle ear, and mastoid air cells	ICD-9-CM	Diagnosis
160.2	Malignant neoplasm of maxillary sinus	ICD-9-CM	Diagnosis
160.3	Malignant neoplasm of ethmoidal sinus	ICD-9-CM	Diagnosis
160.4	Malignant neoplasm of frontal sinus	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
160.5	Malignant neoplasm of sphenoidal sinus	ICD-9-CM	Diagnosis
160.8	Malignant neoplasm of other sites of nasal cavities, middle ear, and accessory sinuses	ICD-9-CM	Diagnosis
160.9	Malignant neoplasm of site of nasal cavities, middle ear, and accessory sinus, unspecified site	ICD-9-CM	Diagnosis
161	Malignant neoplasm of larynx	ICD-9-CM	Diagnosis
161.0	Malignant neoplasm of glottis	ICD-9-CM	Diagnosis
161.1	Malignant neoplasm of supraglottis	ICD-9-CM	Diagnosis
161.2	Malignant neoplasm of subglottis	ICD-9-CM	Diagnosis
161.3	Malignant neoplasm of laryngeal cartilages	ICD-9-CM	Diagnosis
161.8	Malignant neoplasm of other specified sites of larynx	ICD-9-CM	Diagnosis
161.9	Malignant neoplasm of larynx, unspecified site	ICD-9-CM	Diagnosis
162	Malignant neoplasm of trachea, bronchus, and lung	ICD-9-CM	Diagnosis
162.0	Malignant neoplasm of trachea	ICD-9-CM	Diagnosis
162.2	Malignant neoplasm of main bronchus	ICD-9-CM	Diagnosis
162.3	Malignant neoplasm of upper lobe, bronchus, or lung	ICD-9-CM	Diagnosis
162.4	Malignant neoplasm of middle lobe, bronchus, or lung	ICD-9-CM	Diagnosis
162.5	Malignant neoplasm of lower lobe, bronchus, or lung	ICD-9-CM	Diagnosis
162.8	Malignant neoplasm of other parts of bronchus or lung	ICD-9-CM	Diagnosis
162.9	Malignant neoplasm of bronchus and lung, unspecified site	ICD-9-CM	Diagnosis
163	Malignant neoplasm of pleura	ICD-9-CM	Diagnosis
163.0	Malignant neoplasm of parietal pleura	ICD-9-CM	Diagnosis
163.1	Malignant neoplasm of visceral pleura	ICD-9-CM	Diagnosis
163.8	Malignant neoplasm of other specified sites of pleura	ICD-9-CM	Diagnosis
163.9	Malignant neoplasm of pleura, unspecified site	ICD-9-CM	Diagnosis
164	Malignant neoplasm of thymus, heart, and mediastinum	ICD-9-CM	Diagnosis
164.0	Malignant neoplasm of thymus	ICD-9-CM	Diagnosis
164.1	Malignant neoplasm of heart	ICD-9-CM	Diagnosis
164.2	Malignant neoplasm of anterior mediastinum	ICD-9-CM	Diagnosis
164.3	Malignant neoplasm of posterior mediastinum	ICD-9-CM	Diagnosis
164.8	Malignant neoplasm of other parts of mediastinum	ICD-9-CM	Diagnosis
164.9	Malignant neoplasm of mediastinum, part unspecified	ICD-9-CM	Diagnosis
165	Malignant neoplasm of other and ill-defined sites within the respiratory system and intrathoracic organs	ICD-9-CM	Diagnosis
165.0	Malignant neoplasm of upper respiratory tract, part unspecified	ICD-9-CM	Diagnosis
165.8	Malignant neoplasm of other sites within the respiratory system and intrathoracic organs	ICD-9-CM	Diagnosis
165.9	Malignant neoplasm of ill-defined sites within the respiratory system	ICD-9-CM	Diagnosis
170	Malignant neoplasm of bone and articular cartilage	ICD-9-CM	Diagnosis
170.0	Malignant neoplasm of bones of skull and face, except mandible	ICD-9-CM	Diagnosis
170.1	Malignant neoplasm of mandible	ICD-9-CM	Diagnosis
170.2	Malignant neoplasm of vertebral column, excluding sacrum and coccyx	ICD-9-CM	Diagnosis
170.3	Malignant neoplasm of ribs, sternum, and clavicle	ICD-9-CM	Diagnosis
170.4	Malignant neoplasm of scapula and long bones of upper limb	ICD-9-CM	Diagnosis
170.5	Malignant neoplasm of short bones of upper limb	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
170.6	Malignant neoplasm of pelvic bones, sacrum, and coccyx	ICD-9-CM	Diagnosis
170.7	Malignant neoplasm of long bones of lower limb	ICD-9-CM	Diagnosis
170.8	Malignant neoplasm of short bones of lower limb	ICD-9-CM	Diagnosis
170.9	Malignant neoplasm of bone and articular cartilage, site unspecified	ICD-9-CM	Diagnosis
171	Malignant neoplasm of connective and other soft tissue	ICD-9-CM	Diagnosis
171.0	Malignant neoplasm of connective and other soft tissue of head, face, and neck	ICD-9-CM	Diagnosis
171.2	Malignant neoplasm of connective and other soft tissue of upper limb, including shoulder	ICD-9-CM	Diagnosis
171.3	Malignant neoplasm of connective and other soft tissue of lower limb, including hip	ICD-9-CM	Diagnosis
171.4	Malignant neoplasm of connective and other soft tissue of thorax	ICD-9-CM	Diagnosis
171.5	Malignant neoplasm of connective and other soft tissue of abdomen	ICD-9-CM	Diagnosis
171.6	Malignant neoplasm of connective and other soft tissue of pelvis	ICD-9-CM	Diagnosis
171.7	Malignant neoplasm of connective and other soft tissue of trunk, unspecified site	ICD-9-CM	Diagnosis
171.8	Malignant neoplasm of other specified sites of connective and other soft tissue	ICD-9-CM	Diagnosis
171.9	Malignant neoplasm of connective and other soft tissue, site unspecified	ICD-9-CM	Diagnosis
172	Malignant melanoma of skin	ICD-9-CM	Diagnosis
172.0	Malignant melanoma of skin of lip	ICD-9-CM	Diagnosis
172.1	Malignant melanoma of skin of eyelid, including canthus	ICD-9-CM	Diagnosis
172.2	Malignant melanoma of skin of ear and external auditory canal	ICD-9-CM	Diagnosis
172.3	Malignant melanoma of skin of other and unspecified parts of face	ICD-9-CM	Diagnosis
172.4	Malignant melanoma of skin of scalp and neck	ICD-9-CM	Diagnosis
172.5	Malignant melanoma of skin of trunk, except scrotum	ICD-9-CM	Diagnosis
172.6	Malignant melanoma of skin of upper limb, including shoulder	ICD-9-CM	Diagnosis
172.7	Malignant melanoma of skin of lower limb, including hip	ICD-9-CM	Diagnosis
172.8	Malignant melanoma of other specified sites of skin	ICD-9-CM	Diagnosis
172.9	Melanoma of skin, site unspecified	ICD-9-CM	Diagnosis
174	Malignant neoplasm of female breast	ICD-9-CM	Diagnosis
174.0	Malignant neoplasm of nipple and areola of female breast	ICD-9-CM	Diagnosis
174.1	Malignant neoplasm of central portion of female breast	ICD-9-CM	Diagnosis
174.2	Malignant neoplasm of upper-inner quadrant of female breast	ICD-9-CM	Diagnosis
174.3	Malignant neoplasm of lower-inner quadrant of female breast	ICD-9-CM	Diagnosis
174.4	Malignant neoplasm of upper-outer quadrant of female breast	ICD-9-CM	Diagnosis
174.5	Malignant neoplasm of lower-outer quadrant of female breast	ICD-9-CM	Diagnosis
174.6	Malignant neoplasm of axillary tail of female breast	ICD-9-CM	Diagnosis
174.8	Malignant neoplasm of other specified sites of female breast	ICD-9-CM	Diagnosis
174.9	Malignant neoplasm of breast (female), unspecified site	ICD-9-CM	Diagnosis
175	Malignant neoplasm of male breast	ICD-9-CM	Diagnosis
175.0	Malignant neoplasm of nipple and areola of male breast	ICD-9-CM	Diagnosis
175.9	Malignant neoplasm of other and unspecified sites of male breast	ICD-9-CM	Diagnosis
176	Kaposi's sarcoma	ICD-9-CM	Diagnosis
176.0	Kaposi's sarcoma of skin	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
176.1	Kaposi's sarcoma of soft tissue	ICD-9-CM	Diagnosis
176.2	Kaposi's sarcoma of palate	ICD-9-CM	Diagnosis
176.3	Kaposi's sarcoma of gastrointestinal sites	ICD-9-CM	Diagnosis
176.4	Kaposi's sarcoma of lung	ICD-9-CM	Diagnosis
176.5	Kaposi's sarcoma of lymph nodes	ICD-9-CM	Diagnosis
176.8	Kaposi's sarcoma of other specified sites	ICD-9-CM	Diagnosis
176.9	Kaposi's sarcoma of unspecified site	ICD-9-CM	Diagnosis
179	Malignant neoplasm of uterus, part unspecified	ICD-9-CM	Diagnosis
180	Malignant neoplasm of cervix uteri	ICD-9-CM	Diagnosis
180.0	Malignant neoplasm of endocervix	ICD-9-CM	Diagnosis
180.1	Malignant neoplasm of exocervix	ICD-9-CM	Diagnosis
180.8	Malignant neoplasm of other specified sites of cervix	ICD-9-CM	Diagnosis
180.9	Malignant neoplasm of cervix uteri, unspecified site	ICD-9-CM	Diagnosis
181	Malignant neoplasm of placenta	ICD-9-CM	Diagnosis
182	Malignant neoplasm of body of uterus	ICD-9-CM	Diagnosis
182.0	Malignant neoplasm of corpus uteri, except isthmus	ICD-9-CM	Diagnosis
182.1	Malignant neoplasm of isthmus	ICD-9-CM	Diagnosis
182.8	Malignant neoplasm of other specified sites of body of uterus	ICD-9-CM	Diagnosis
183	Malignant neoplasm of ovary and other uterine adnexa	ICD-9-CM	Diagnosis
183.0	Malignant neoplasm of ovary	ICD-9-CM	Diagnosis
183.2	Malignant neoplasm of fallopian tube	ICD-9-CM	Diagnosis
183.3	Malignant neoplasm of broad ligament of uterus	ICD-9-CM	Diagnosis
183.4	Malignant neoplasm of parametrium of uterus	ICD-9-CM	Diagnosis
183.5	Malignant neoplasm of round ligament of uterus	ICD-9-CM	Diagnosis
183.8	Malignant neoplasm of other specified sites of uterine adnexa	ICD-9-CM	Diagnosis
183.9	Malignant neoplasm of uterine adnexa, unspecified site	ICD-9-CM	Diagnosis
184	Malignant neoplasm of other and unspecified female genital organs	ICD-9-CM	Diagnosis
184.0	Malignant neoplasm of vagina	ICD-9-CM	Diagnosis
184.1	Malignant neoplasm of labia majora	ICD-9-CM	Diagnosis
184.2	Malignant neoplasm of labia minora	ICD-9-CM	Diagnosis
184.3	Malignant neoplasm of clitoris	ICD-9-CM	Diagnosis
184.4	Malignant neoplasm of vulva, unspecified site	ICD-9-CM	Diagnosis
184.8	Malignant neoplasm of other specified sites of female genital organs	ICD-9-CM	Diagnosis
184.9	Malignant neoplasm of female genital organ, site unspecified	ICD-9-CM	Diagnosis
185	Malignant neoplasm of prostate	ICD-9-CM	Diagnosis
186	Malignant neoplasm of testis	ICD-9-CM	Diagnosis
186.0	Malignant neoplasm of undescended testis	ICD-9-CM	Diagnosis
186.9	Malignant neoplasm of other and unspecified testis	ICD-9-CM	Diagnosis
187	Malignant neoplasm of penis and other male genital organs	ICD-9-CM	Diagnosis
187.1	Malignant neoplasm of prepuce	ICD-9-CM	Diagnosis
187.2	Malignant neoplasm of glans penis	ICD-9-CM	Diagnosis
187.3	Malignant neoplasm of body of penis	ICD-9-CM	Diagnosis
187.4	Malignant neoplasm of penis, part unspecified	ICD-9-CM	Diagnosis
187.5	Malignant neoplasm of epididymis	ICD-9-CM	Diagnosis
187.6	Malignant neoplasm of spermatic cord	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
187.7	Malignant neoplasm of scrotum	ICD-9-CM	Diagnosis
187.8	Malignant neoplasm of other specified sites of male genital organs	ICD-9-CM	Diagnosis
187.9	Malignant neoplasm of male genital organ, site unspecified	ICD-9-CM	Diagnosis
188	Malignant neoplasm of bladder	ICD-9-CM	Diagnosis
188.0	Malignant neoplasm of trigone of urinary bladder	ICD-9-CM	Diagnosis
188.1	Malignant neoplasm of dome of urinary bladder	ICD-9-CM	Diagnosis
188.2	Malignant neoplasm of lateral wall of urinary bladder	ICD-9-CM	Diagnosis
188.3	Malignant neoplasm of anterior wall of urinary bladder	ICD-9-CM	Diagnosis
188.4	Malignant neoplasm of posterior wall of urinary bladder	ICD-9-CM	Diagnosis
188.5	Malignant neoplasm of bladder neck	ICD-9-CM	Diagnosis
188.6	Malignant neoplasm of ureteric orifice	ICD-9-CM	Diagnosis
188.7	Malignant neoplasm of urachus	ICD-9-CM	Diagnosis
188.8	Malignant neoplasm of other specified sites of bladder	ICD-9-CM	Diagnosis
188.9	Malignant neoplasm of bladder, part unspecified	ICD-9-CM	Diagnosis
189	Malignant neoplasm of kidney and other and unspecified urinary organs	ICD-9-CM	Diagnosis
189.0	Malignant neoplasm of kidney, except pelvis	ICD-9-CM	Diagnosis
189.1	Malignant neoplasm of renal pelvis	ICD-9-CM	Diagnosis
189.2	Malignant neoplasm of ureter	ICD-9-CM	Diagnosis
189.3	Malignant neoplasm of urethra	ICD-9-CM	Diagnosis
189.4	Malignant neoplasm of paraurethral glands	ICD-9-CM	Diagnosis
189.8	Malignant neoplasm of other specified sites of urinary organs	ICD-9-CM	Diagnosis
189.9	Malignant neoplasm of urinary organ, site unspecified	ICD-9-CM	Diagnosis
190	Malignant neoplasm of eye	ICD-9-CM	Diagnosis
190.0	Malignant neoplasm of eyeball, except conjunctiva, cornea, retina, and choroid	ICD-9-CM	Diagnosis
190.1	Malignant neoplasm of orbit	ICD-9-CM	Diagnosis
190.2	Malignant neoplasm of lacrimal gland	ICD-9-CM	Diagnosis
190.3	Malignant neoplasm of conjunctiva	ICD-9-CM	Diagnosis
190.4	Malignant neoplasm of cornea	ICD-9-CM	Diagnosis
190.5	Malignant neoplasm of retina	ICD-9-CM	Diagnosis
190.6	Malignant neoplasm of choroid	ICD-9-CM	Diagnosis
190.7	Malignant neoplasm of lacrimal duct	ICD-9-CM	Diagnosis
190.8	Malignant neoplasm of other specified sites of eye	ICD-9-CM	Diagnosis
190.9	Malignant neoplasm of eye, part unspecified	ICD-9-CM	Diagnosis
191	Malignant neoplasm of brain	ICD-9-CM	Diagnosis
191.0	Malignant neoplasm of cerebrum, except lobes and ventricles	ICD-9-CM	Diagnosis
191.1	Malignant neoplasm of frontal lobe of brain	ICD-9-CM	Diagnosis
191.2	Malignant neoplasm of temporal lobe of brain	ICD-9-CM	Diagnosis
191.3	Malignant neoplasm of parietal lobe of brain	ICD-9-CM	Diagnosis
191.4	Malignant neoplasm of occipital lobe of brain	ICD-9-CM	Diagnosis
191.5	Malignant neoplasm of ventricles of brain	ICD-9-CM	Diagnosis
191.6	Malignant neoplasm of cerebellum NOS	ICD-9-CM	Diagnosis
191.7	Malignant neoplasm of brain stem	ICD-9-CM	Diagnosis
191.8	Malignant neoplasm of other parts of brain	ICD-9-CM	Diagnosis
191.9	Malignant neoplasm of brain, unspecified site	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
192	Malignant neoplasm of other and unspecified parts of nervous system	ICD-9-CM	Diagnosis
192.0	Malignant neoplasm of cranial nerves	ICD-9-CM	Diagnosis
192.1	Malignant neoplasm of cerebral meninges	ICD-9-CM	Diagnosis
192.2	Malignant neoplasm of spinal cord	ICD-9-CM	Diagnosis
192.3	Malignant neoplasm of spinal meninges	ICD-9-CM	Diagnosis
192.8	Malignant neoplasm of other specified sites of nervous system	ICD-9-CM	Diagnosis
192.9	Malignant neoplasm of nervous system, part unspecified	ICD-9-CM	Diagnosis
193	Malignant neoplasm of thyroid gland	ICD-9-CM	Diagnosis
194	Malignant neoplasm of other endocrine glands and related structures	ICD-9-CM	Diagnosis
194.0	Malignant neoplasm of adrenal gland	ICD-9-CM	Diagnosis
194.1	Malignant neoplasm of parathyroid gland	ICD-9-CM	Diagnosis
194.3	Malignant neoplasm of pituitary gland and craniopharyngeal duct	ICD-9-CM	Diagnosis
194.4	Malignant neoplasm of pineal gland	ICD-9-CM	Diagnosis
194.5	Malignant neoplasm of carotid body	ICD-9-CM	Diagnosis
194.6	Malignant neoplasm of aortic body and other paraganglia	ICD-9-CM	Diagnosis
194.8	Malignant neoplasm of other endocrine glands and related structures	ICD-9-CM	Diagnosis
194.9	Malignant neoplasm of endocrine gland, site unspecified	ICD-9-CM	Diagnosis
195	Malignant neoplasm of other and ill-defined sites	ICD-9-CM	Diagnosis
195.0	Malignant neoplasm of head, face, and neck	ICD-9-CM	Diagnosis
195.1	Malignant neoplasm of thorax	ICD-9-CM	Diagnosis
195.2	Malignant neoplasm of abdomen	ICD-9-CM	Diagnosis
195.3	Malignant neoplasm of pelvis	ICD-9-CM	Diagnosis
195.4	Malignant neoplasm of upper limb	ICD-9-CM	Diagnosis
195.5	Malignant neoplasm of lower limb	ICD-9-CM	Diagnosis
195.8	Malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
196	Secondary and unspecified malignant neoplasm of lymph nodes	ICD-9-CM	Diagnosis
196.0	Secondary and unspecified malignant neoplasm of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
196.1	Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
196.2	Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
196.3	Secondary and unspecified malignant neoplasm of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
196.5	Secondary and unspecified malignant neoplasm of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
196.6	Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
196.8	Secondary and unspecified malignant neoplasm of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
196.9	Secondary and unspecified malignant neoplasm of lymph nodes, site unspecified	ICD-9-CM	Diagnosis
197	Secondary malignant neoplasm of respiratory and digestive systems	ICD-9-CM	Diagnosis
197.0	Secondary malignant neoplasm of lung	ICD-9-CM	Diagnosis
197.1	Secondary malignant neoplasm of mediastinum	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
197.2	Secondary malignant neoplasm of pleura	ICD-9-CM	Diagnosis
197.3	Secondary malignant neoplasm of other respiratory organs	ICD-9-CM	Diagnosis
197.4	Secondary malignant neoplasm of small intestine including duodenum	ICD-9-CM	Diagnosis
197.5	Secondary malignant neoplasm of large intestine and rectum	ICD-9-CM	Diagnosis
197.6	Secondary malignant neoplasm of retroperitoneum and peritoneum	ICD-9-CM	Diagnosis
197.7	Secondary malignant neoplasm of liver	ICD-9-CM	Diagnosis
197.8	Secondary malignant neoplasm of other digestive organs and spleen	ICD-9-CM	Diagnosis
198	Secondary malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
198.0	Secondary malignant neoplasm of kidney	ICD-9-CM	Diagnosis
198.1	Secondary malignant neoplasm of other urinary organs	ICD-9-CM	Diagnosis
198.2	Secondary malignant neoplasm of skin	ICD-9-CM	Diagnosis
198.3	Secondary malignant neoplasm of brain and spinal cord	ICD-9-CM	Diagnosis
198.4	Secondary malignant neoplasm of other parts of nervous system	ICD-9-CM	Diagnosis
198.5	Secondary malignant neoplasm of bone and bone marrow	ICD-9-CM	Diagnosis
198.6	Secondary malignant neoplasm of ovary	ICD-9-CM	Diagnosis
198.7	Secondary malignant neoplasm of adrenal gland	ICD-9-CM	Diagnosis
198.8	Secondary malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
198.81	Secondary malignant neoplasm of breast	ICD-9-CM	Diagnosis
198.82	Secondary malignant neoplasm of genital organs	ICD-9-CM	Diagnosis
198.89	Secondary malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
199	Malignant neoplasm without specification of site	ICD-9-CM	Diagnosis
199.0	Disseminated malignant neoplasm	ICD-9-CM	Diagnosis
199.1	Other malignant neoplasm of unspecified site	ICD-9-CM	Diagnosis
199.2	Malignant neoplasm associated with transplanted organ	ICD-9-CM	Diagnosis
200	Lymphosarcoma and reticulosarcoma and other specified malignant tumors of lymphatic tissue	ICD-9-CM	Diagnosis
200.0	Reticulosarcoma	ICD-9-CM	Diagnosis
200.00	Reticulosarcoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.01	Reticulosarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.02	Reticulosarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.03	Reticulosarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.04	Reticulosarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.05	Reticulosarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.06	Reticulosarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.07	Reticulosarcoma of spleen	ICD-9-CM	Diagnosis
200.08	Reticulosarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.1	Lymphosarcoma	ICD-9-CM	Diagnosis
200.10	Lymphosarcoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.11	Lymphosarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.12	Lymphosarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.13	Lymphosarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.14	Lymphosarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.15	Lymphosarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.16	Lymphosarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.17	Lymphosarcoma of spleen	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
200.18	Lymphosarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.2	Burkitt's tumor or lymphoma	ICD-9-CM	Diagnosis
200.20	Burkitt's tumor or lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.21	Burkitt's tumor or lymphoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.22	Burkitt's tumor or lymphoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.23	Burkitt's tumor or lymphoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.24	Burkitt's tumor or lymphoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.25	Burkitt's tumor or lymphoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.26	Burkitt's tumor or lymphoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.27	Burkitt's tumor or lymphoma of spleen	ICD-9-CM	Diagnosis
200.28	Burkitt's tumor or lymphoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.3	Marginal zone lymphoma	ICD-9-CM	Diagnosis
200.30	Marginal zone lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.31	Marginal zone lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.32	Marginal zone lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.33	Marginal zone lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.34	Marginal zone lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.35	Marginal zone lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.36	Marginal zone lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.37	Marginal zone lymphoma, spleen	ICD-9-CM	Diagnosis
200.38	Marginal zone lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.4	Mantle cell lymphoma	ICD-9-CM	Diagnosis
200.40	Mantle cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.41	Mantle cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.42	Mantle cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.43	Mantle cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.44	Mantle cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.45	Mantle cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.46	Mantle cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.47	Mantle cell lymphoma, spleen	ICD-9-CM	Diagnosis
200.48	Mantle cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.5	Primary central nervous system lymphoma	ICD-9-CM	Diagnosis
200.50	Primary central nervous system lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.51	Primary central nervous system lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.52	Primary central nervous system lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.53	Primary central nervous system lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.54	Primary central nervous system lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
200.55	Primary central nervous system lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.56	Primary central nervous system lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.57	Primary central nervous system lymphoma, spleen	ICD-9-CM	Diagnosis
200.58	Primary central nervous system lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.6	Anaplastic large cell lymphoma	ICD-9-CM	Diagnosis
200.60	Anaplastic large cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.61	Anaplastic large cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.62	Anaplastic large cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.63	Anaplastic large cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.64	Anaplastic large cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.65	Anaplastic large cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.66	Anaplastic large cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.67	Anaplastic large cell lymphoma, spleen	ICD-9-CM	Diagnosis
200.68	Anaplastic large cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.7	Large cell lymphoma	ICD-9-CM	Diagnosis
200.70	Large cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.71	Large cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.72	Large cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.73	Large cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.74	Large cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.75	Large cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.76	Large cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.77	Large cell lymphoma, spleen	ICD-9-CM	Diagnosis
200.78	Large cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.8	Other named variants of lymphosarcoma and reticulosarcoma	ICD-9-CM	Diagnosis
200.80	Other named variants, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.81	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.82	Other named variants of lymphosarcoma and reticulosarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.83	Other named variants of lymphosarcoma and reticulosarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.84	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.85	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.86	Other named variants of lymphosarcoma and reticulosarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.87	Other named variants of lymphosarcoma and reticulosarcoma of spleen	ICD-9-CM	Diagnosis
200.88	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
201	Hodgkin's disease	ICD-9-CM	Diagnosis
201.0	Hodgkin's paragranuloma	ICD-9-CM	Diagnosis
201.00	Hodgkin's paragranuloma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.01	Hodgkin's paragranuloma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.02	Hodgkin's paragranuloma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.03	Hodgkin's paragranuloma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.04	Hodgkin's paragranuloma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.05	Hodgkin's paragranuloma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.06	Hodgkin's paragranuloma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.07	Hodgkin's paragranuloma of spleen	ICD-9-CM	Diagnosis
201.08	Hodgkin's paragranuloma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.1	Hodgkin's granuloma	ICD-9-CM	Diagnosis
201.10	Hodgkin's granuloma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.11	Hodgkin's granuloma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.12	Hodgkin's granuloma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.13	Hodgkin's granuloma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.14	Hodgkin's granuloma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.15	Hodgkin's granuloma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.16	Hodgkin's granuloma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.17	Hodgkin's granuloma of spleen	ICD-9-CM	Diagnosis
201.18	Hodgkin's granuloma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.2	Hodgkin's sarcoma	ICD-9-CM	Diagnosis
201.20	Hodgkin's sarcoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.21	Hodgkin's sarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.22	Hodgkin's sarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.23	Hodgkin's sarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.24	Hodgkin's sarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.25	Hodgkin's sarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.26	Hodgkin's sarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.27	Hodgkin's sarcoma of spleen	ICD-9-CM	Diagnosis
201.28	Hodgkin's sarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.4	Hodgkin's disease, lymphocytic-histiocytic predominance	ICD-9-CM	Diagnosis
201.40	Hodgkin's disease, lymphocytic-histiocytic predominance, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.41	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.42	Hodgkin's disease, lymphocytic-histiocytic predominance of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.43	Hodgkin's disease, lymphocytic-histiocytic predominance of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.44	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
201.45	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.46	Hodgkin's disease, lymphocytic-histiocytic predominance of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.47	Hodgkin's disease, lymphocytic-histiocytic predominance of spleen	ICD-9-CM	Diagnosis
201.48	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.5	Hodgkin's disease, nodular sclerosis	ICD-9-CM	Diagnosis
201.50	Hodgkin's disease, nodular sclerosis, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.51	Hodgkin's disease, nodular sclerosis, of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.52	Hodgkin's disease, nodular sclerosis, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.53	Hodgkin's disease, nodular sclerosis, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.54	Hodgkin's disease, nodular sclerosis, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.55	Hodgkin's disease, nodular sclerosis, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.56	Hodgkin's disease, nodular sclerosis, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.57	Hodgkin's disease, nodular sclerosis, of spleen	ICD-9-CM	Diagnosis
201.58	Hodgkin's disease, nodular sclerosis, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.6	Hodgkin's disease, mixed cellularity	ICD-9-CM	Diagnosis
201.60	Hodgkin's disease, mixed cellularity, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.61	Hodgkin's disease, mixed cellularity, involving lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.62	Hodgkin's disease, mixed cellularity, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.63	Hodgkin's disease, mixed cellularity, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.64	Hodgkin's disease, mixed cellularity, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.65	Hodgkin's disease, mixed cellularity, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.66	Hodgkin's disease, mixed cellularity, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.67	Hodgkin's disease, mixed cellularity, of spleen	ICD-9-CM	Diagnosis
201.68	Hodgkin's disease, mixed cellularity, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.7	Hodgkin's disease, lymphocytic depletion	ICD-9-CM	Diagnosis
201.70	Hodgkin's disease, lymphocytic depletion, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.71	Hodgkin's disease, lymphocytic depletion, of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.72	Hodgkin's disease, lymphocytic depletion, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.73	Hodgkin's disease, lymphocytic depletion, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.74	Hodgkin's disease, lymphocytic depletion, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
201.75	Hodgkin's disease, lymphocytic depletion, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.76	Hodgkin's disease, lymphocytic depletion, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.77	Hodgkin's disease, lymphocytic depletion, of spleen	ICD-9-CM	Diagnosis
201.78	Hodgkin's disease, lymphocytic depletion, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.9	Hodgkin's disease, unspecified type	ICD-9-CM	Diagnosis
201.90	Hodgkin's disease, unspecified type, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.91	Hodgkin's disease, unspecified type, of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.92	Hodgkin's disease, unspecified type, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.93	Hodgkin's disease, unspecified type, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.94	Hodgkin's disease, unspecified type, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.95	Hodgkin's disease, unspecified type, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.96	Hodgkin's disease, unspecified type, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.97	Hodgkin's disease, unspecified type, of spleen	ICD-9-CM	Diagnosis
201.98	Hodgkin's disease, unspecified type, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202	Other malignant neoplasms of lymphoid and histiocytic tissue	ICD-9-CM	Diagnosis
202.0	Nodular lymphoma	ICD-9-CM	Diagnosis
202.00	Nodular lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.01	Nodular lymphoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.02	Nodular lymphoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.03	Nodular lymphoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.04	Nodular lymphoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.05	Nodular lymphoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.06	Nodular lymphoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.07	Nodular lymphoma of spleen	ICD-9-CM	Diagnosis
202.08	Nodular lymphoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.1	Mycosis fungoides	ICD-9-CM	Diagnosis
202.10	Mycosis fungoides, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.11	Mycosis fungoides of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.12	Mycosis fungoides of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.13	Mycosis fungoides of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.14	Mycosis fungoides of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.15	Mycosis fungoides of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.16	Mycosis fungoides of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.17	Mycosis fungoides of spleen	ICD-9-CM	Diagnosis
202.18	Mycosis fungoides of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.2	Sezary's disease	ICD-9-CM	Diagnosis
202.20	Sezary's disease, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.21	Sezary's disease of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.22	Sezary's disease of intrathoracic lymph nodes	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
202.23	Sezary's disease of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.24	Sezary's disease of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.25	Sezary's disease of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.26	Sezary's disease of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.27	Sezary's disease of spleen	ICD-9-CM	Diagnosis
202.28	Sezary's disease of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.3	Malignant histiocytosis	ICD-9-CM	Diagnosis
202.30	Malignant histiocytosis, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.31	Malignant histiocytosis of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.32	Malignant histiocytosis of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.33	Malignant histiocytosis of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.34	Malignant histiocytosis of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.35	Malignant histiocytosis of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.36	Malignant histiocytosis of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.37	Malignant histiocytosis of spleen	ICD-9-CM	Diagnosis
202.38	Malignant histiocytosis of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.4	Leukemic reticuloendotheliosis	ICD-9-CM	Diagnosis
202.40	Leukemic reticuloendotheliosis, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.41	Leukemic reticuloendotheliosis of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.42	Leukemic reticuloendotheliosis of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.43	Leukemic reticuloendotheliosis of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.44	Leukemic reticuloendotheliosis of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.45	Leukemic reticuloendotheliosis of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.46	Leukemic reticuloendotheliosis of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.47	Leukemic reticuloendotheliosis of spleen	ICD-9-CM	Diagnosis
202.48	Leukemic reticuloendotheliosis of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.5	Letterer-Siwe disease	ICD-9-CM	Diagnosis
202.50	Letterer-Siwe disease, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.51	Letterer-Siwe disease of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.52	Letterer-Siwe disease of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.53	Letterer-Siwe disease of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.54	Letterer-Siwe disease of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.55	Letterer-Siwe disease of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.56	Letterer-Siwe disease of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.57	Letterer-Siwe disease of spleen	ICD-9-CM	Diagnosis
202.58	Letterer-Siwe disease of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.6	Malignant mast cell tumors	ICD-9-CM	Diagnosis
202.60	Malignant mast cell tumors, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.61	Malignant mast cell tumors of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.62	Malignant mast cell tumors of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.63	Malignant mast cell tumors of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.64	Malignant mast cell tumors of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
202.65	Malignant mast cell tumors of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.66	Malignant mast cell tumors of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.67	Malignant mast cell tumors of spleen	ICD-9-CM	Diagnosis
202.68	Malignant mast cell tumors of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.7	Peripheral T-cell lymphoma	ICD-9-CM	Diagnosis
202.70	Peripheral T-cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.71	Peripheral T-cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.72	Peripheral T-cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.73	Peripheral T-cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.74	Peripheral T-cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.75	Peripheral T-cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.76	Peripheral T-cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.77	Peripheral T-cell lymphoma, spleen	ICD-9-CM	Diagnosis
202.78	Peripheral T-cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.8	Other malignant lymphomas	ICD-9-CM	Diagnosis
202.80	Other malignant lymphomas, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.81	Other malignant lymphomas of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.82	Other malignant lymphomas of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.83	Other malignant lymphomas of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.84	Other malignant lymphomas of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.85	Other malignant lymphomas of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.86	Other malignant lymphomas of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.87	Other malignant lymphomas of spleen	ICD-9-CM	Diagnosis
202.88	Other malignant lymphomas of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.9	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue	ICD-9-CM	Diagnosis
202.90	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.91	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.92	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.93	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.94	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.95	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.96	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of intrapelvic lymph nodes	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
202.97	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of spleen	ICD-9-CM	Diagnosis
202.98	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
203	Multiple myeloma and immunoproliferative neoplasms	ICD-9-CM	Diagnosis
203.0	Multiple myeloma	ICD-9-CM	Diagnosis
203.00	Multiple myeloma, without mention of having achieved remission	ICD-9-CM	Diagnosis
203.01	Multiple myeloma in remission	ICD-9-CM	Diagnosis
203.02	Multiple myeloma, in relapse	ICD-9-CM	Diagnosis
203.1	Plasma cell leukemia	ICD-9-CM	Diagnosis
203.10	Plasma cell leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
203.11	Plasma cell leukemia in remission	ICD-9-CM	Diagnosis
203.12	Plasma cell leukemia, in relapse	ICD-9-CM	Diagnosis
203.8	Other immunoproliferative neoplasms	ICD-9-CM	Diagnosis
203.80	Other immunoproliferative neoplasms, without mention of having achieved remission	ICD-9-CM	Diagnosis
203.81	Other immunoproliferative neoplasms in remission	ICD-9-CM	Diagnosis
203.82	Other immunoproliferative neoplasms, in relapse	ICD-9-CM	Diagnosis
204	Lymphoid leukemia	ICD-9-CM	Diagnosis
204.0	Acute lymphoid leukemia	ICD-9-CM	Diagnosis
204.00	Acute lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.01	Acute lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.02	Acute lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.1	Chronic lymphoid leukemia	ICD-9-CM	Diagnosis
204.10	Chronic lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.11	Chronic lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.12	Chronic lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.2	Subacute lymphoid leukemia	ICD-9-CM	Diagnosis
204.20	Subacute lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.21	Subacute lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.22	Subacute lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.8	Other lymphoid leukemia	ICD-9-CM	Diagnosis
204.80	Other lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.81	Other lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.82	Other lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.9	Unspecified lymphoid leukemia	ICD-9-CM	Diagnosis
204.90	Unspecified lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.91	Unspecified lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.92	Unspecified lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
205	Myeloid leukemia	ICD-9-CM	Diagnosis
205.0	Acute myeloid leukemia	ICD-9-CM	Diagnosis
205.00	Acute myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
205.01	Acute myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.02	Acute myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.1	Chronic myeloid leukemia	ICD-9-CM	Diagnosis
205.10	Chronic myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.11	Chronic myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.12	Chronic myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.2	Subacute myeloid leukemia	ICD-9-CM	Diagnosis
205.20	Subacute myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.21	Subacute myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.22	Subacute myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.3	Myeloid sarcoma	ICD-9-CM	Diagnosis
205.30	Myeloid sarcoma, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.31	Myeloid sarcoma in remission	ICD-9-CM	Diagnosis
205.32	Myeloid sarcoma, in relapse	ICD-9-CM	Diagnosis
205.8	Other myeloid leukemia	ICD-9-CM	Diagnosis
205.80	Other myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.81	Other myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.82	Other myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.9	Unspecified myeloid leukemia	ICD-9-CM	Diagnosis
205.90	Unspecified myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.91	Unspecified myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.92	Unspecified myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
206	Monocytic leukemia	ICD-9-CM	Diagnosis
206.0	Acute monocytic leukemia	ICD-9-CM	Diagnosis
206.00	Acute monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.01	Acute monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.02	Acute monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.1	Chronic monocytic leukemia	ICD-9-CM	Diagnosis
206.10	Chronic monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.11	Chronic monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.12	Chronic monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.2	Subacute monocytic leukemia	ICD-9-CM	Diagnosis
206.20	Subacute monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.21	Subacute monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.22	Subacute monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.8	Other monocytic leukemia	ICD-9-CM	Diagnosis
206.80	Other monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.81	Other monocytic leukemia in remission	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
206.82	Other monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.9	Unspecified monocytic leukemia	ICD-9-CM	Diagnosis
206.90	Unspecified monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.91	Unspecified monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.92	Unspecified monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
207	Other specified leukemia	ICD-9-CM	Diagnosis
207.0	Acute erythremia and erythroleukemia	ICD-9-CM	Diagnosis
207.00	Acute erythremia and erythroleukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.01	Acute erythremia and erythroleukemia in remission	ICD-9-CM	Diagnosis
207.02	Acute erythremia and erythroleukemia, in relapse	ICD-9-CM	Diagnosis
207.1	Chronic erythremia	ICD-9-CM	Diagnosis
207.10	Chronic erythremia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.11	Chronic erythremia in remission	ICD-9-CM	Diagnosis
207.12	Chronic erythremia, in relapse	ICD-9-CM	Diagnosis
207.2	Megakaryocytic leukemia	ICD-9-CM	Diagnosis
207.20	Megakaryocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.21	Megakaryocytic leukemia in remission	ICD-9-CM	Diagnosis
207.22	Megakaryocytic leukemia, in relapse	ICD-9-CM	Diagnosis
207.8	Other specified leukemia	ICD-9-CM	Diagnosis
207.80	Other specified leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.81	Other specified leukemia in remission	ICD-9-CM	Diagnosis
207.82	Other specified leukemia, in relapse	ICD-9-CM	Diagnosis
208	Leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.0	Acute leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.00	Acute leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.01	Acute leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.02	Acute leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis
208.1	Chronic leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.10	Chronic leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.11	Chronic leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.12	Chronic leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis
208.2	Subacute leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.20	Subacute leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.21	Subactue leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.22	Subacute leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis
208.8	Other leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.80	Other leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.81	Other leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.82	Other leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
208.9	Unspecified leukemia	ICD-9-CM	Diagnosis
208.90	Unspecified leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.91	Unspecified leukemia in remission	ICD-9-CM	Diagnosis
208.92	Unspecified leukemia, in relapse	ICD-9-CM	Diagnosis
209	Neuroendocrine tumors	ICD-9-CM	Diagnosis
209.0	Malignant carcinoid tumors of the small intestine	ICD-9-CM	Diagnosis
209.00	Malignant carcinoid tumor of the small intestine, unspecified portion	ICD-9-CM	Diagnosis
209.01	Malignant carcinoid tumor of the duodenum	ICD-9-CM	Diagnosis
209.02	Malignant carcinoid tumor of the jejunum	ICD-9-CM	Diagnosis
209.03	Malignant carcinoid tumor of the ileum	ICD-9-CM	Diagnosis
209.1	Malignant carcinoid tumors of the appendix, large intestine, and rectum	ICD-9-CM	Diagnosis
209.10	Malignant carcinoid tumor of the large intestine, unspecified portion	ICD-9-CM	Diagnosis
209.11	Malignant carcinoid tumor of the appendix	ICD-9-CM	Diagnosis
209.12	Malignant carcinoid tumor of the cecum	ICD-9-CM	Diagnosis
209.13	Malignant carcinoid tumor of the ascending colon	ICD-9-CM	Diagnosis
209.14	Malignant carcinoid tumor of the transverse colon	ICD-9-CM	Diagnosis
209.15	Malignant carcinoid tumor of the descending colon	ICD-9-CM	Diagnosis
209.16	Malignant carcinoid tumor of the sigmoid colon	ICD-9-CM	Diagnosis
209.17	Malignant carcinoid tumor of the rectum	ICD-9-CM	Diagnosis
209.2	Malignant carcinoid tumors of other and unspecified sites	ICD-9-CM	Diagnosis
209.20	Malignant carcinoid tumor of unknown primary site	ICD-9-CM	Diagnosis
209.21	Malignant carcinoid tumor of the bronchus and lung	ICD-9-CM	Diagnosis
209.22	Malignant carcinoid tumor of the thymus	ICD-9-CM	Diagnosis
209.23	Malignant carcinoid tumor of the stomach	ICD-9-CM	Diagnosis
209.24	Malignant carcinoid tumor of the kidney	ICD-9-CM	Diagnosis
209.25	Malignant carcinoid tumor of foregut, not otherwise specified	ICD-9-CM	Diagnosis
209.26	Malignant carcinoid tumor of midgut, not otherwise specified	ICD-9-CM	Diagnosis
209.27	Malignant carcinoid tumor of hindgut, not otherwise specified	ICD-9-CM	Diagnosis
209.29	Malignant carcinoid tumor of other sites	ICD-9-CM	Diagnosis
209.3	Malignant poorly differentiated neuroendocrine tumors	ICD-9-CM	Diagnosis
209.30	Malignant poorly differentiated neuroendocrine carcinoma, any site	ICD-9-CM	Diagnosis
209.31	Merkel cell carcinoma of the face	ICD-9-CM	Diagnosis
209.32	Merkel cell carcinoma of the scalp and neck	ICD-9-CM	Diagnosis
209.33	Merkel cell carcinoma of the upper limb	ICD-9-CM	Diagnosis
209.34	Merkel cell carcinoma of the lower limb	ICD-9-CM	Diagnosis
209.35	Merkel cell carcinoma of the trunk	ICD-9-CM	Diagnosis
209.36	Merkel cell carcinoma of other sites	ICD-9-CM	Diagnosis
209.7	Secondary neuroendocrine tumors	ICD-9-CM	Diagnosis
209.70	Secondary neuroendocrine tumor, unspecified site	ICD-9-CM	Diagnosis
209.71	Secondary neuroendocrine tumor of distant lymph nodes	ICD-9-CM	Diagnosis
209.72	Secondary neuroendocrine tumor of liver	ICD-9-CM	Diagnosis
209.73	Secondary neuroendocrine tumor of bone	ICD-9-CM	Diagnosis
209.74	Secondary neuroendocrine tumor of peritoneum	ICD-9-CM	Diagnosis
209.75	Secondary Merkel cell carcinoma	ICD-9-CM	Diagnosis
209.79	Secondary neuroendocrine tumor of other sites	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
	Chronic Kidney Disease (Excluding End Stage Renal Disease)		
585.1	Chronic kidney disease, Stage I	ICD-9-CM	Diagnosis
585.2	Chronic kidney disease, Stage II (mild)	ICD-9-CM	Diagnosis
585.3	Chronic kidney disease, Stage III (moderate)	ICD-9-CM	Diagnosis
585.4	Chronic kidney disease, Stage IV (severe)	ICD-9-CM	Diagnosis
G0420	Face-to-face educational services related to the care of chronic kidney disease; individual, per session, per one hour	HCPCS	Procedure
G0421	Face-to-face educational services related to the care of chronic kidney disease; group, per session, per one hour	HCPCS	Procedure
G8487	I intend to report the chronic kidney disease (CKD) measures group	HCPCS	Procedure
G8771	Documentation of diagnosis of chronic kidney disease	HCPCS	Procedure
	Chronic Obstructive Pulmonary Disease		
491	Chronic bronchitis	ICD-9-CM	Diagnosis
491.0	Simple chronic bronchitis	ICD-9-CM	Diagnosis
491.1	Mucopurulent chronic bronchitis	ICD-9-CM	Diagnosis
491.2	Obstructive chronic bronchitis	ICD-9-CM	Diagnosis
491.20	Obstructive chronic bronchitis, without exacerbation	ICD-9-CM	Diagnosis
491.21	Obstructive chronic bronchitis, with (acute) exacerbation	ICD-9-CM	Diagnosis
491.22	Obstructive chronic bronchitis with acute bronchitis	ICD-9-CM	Diagnosis
491.8	Other chronic bronchitis	ICD-9-CM	Diagnosis
491.9	Unspecified chronic bronchitis	ICD-9-CM	Diagnosis
492	Emphysema	ICD-9-CM	Diagnosis
492.0	Emphysematous bleb	ICD-9-CM	Diagnosis
492.8	Other emphysema	ICD-9-CM	Diagnosis
496	Chronic airway obstruction, not elsewhere classified	ICD-9-CM	Diagnosis
	Dementia		
290.0	Senile dementia, uncomplicated	ICD-9-CM	Diagnosis
290.1	Presenile dementia	ICD-9-CM	Diagnosis
290.10	Presenile dementia, uncomplicated	ICD-9-CM	Diagnosis
290.11	Presenile dementia with delirium	ICD-9-CM	Diagnosis
290.12	Presenile dementia with delusional features	ICD-9-CM	Diagnosis
290.13	Presenile dementia with depressive features	ICD-9-CM	Diagnosis
290.2	Senile dementia with delusional or depressive features	ICD-9-CM	Diagnosis
290.20	Senile dementia with delusional features	ICD-9-CM	Diagnosis
290.21	Senile dementia with depressive features	ICD-9-CM	Diagnosis
290.3	Senile dementia with delirium	ICD-9-CM	Diagnosis
290.4	Vascular dementia	ICD-9-CM	Diagnosis
290.40	Vascular dementia, uncomplicated	ICD-9-CM	Diagnosis
290.41	Vascular dementia, with delirium	ICD-9-CM	Diagnosis
290.42	Vascular dementia, with delusions	ICD-9-CM	Diagnosis
290.43	Vascular dementia, with depressed mood	ICD-9-CM	Diagnosis
291.2	Alcohol-induced persisting dementia	ICD-9-CM	Diagnosis
292.82	Drug-induced persisting dementia	ICD-9-CM	Diagnosis
294.0	Amnestic disorder in conditions classified elsewhere	ICD-9-CM	Diagnosis
294.1	Dementia in conditions classified elsewhere	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
294.10	Dementia in conditions classified elsewhere without behavioral disturbance	ICD-9-CM	Diagnosis
294.11	Dementia in conditions classified elsewhere with behavioral disturbance	ICD-9-CM	Diagnosis
294.8	Other persistent mental disorders due to conditions classified elsewhere	ICD-9-CM	Diagnosis
331.0	Alzheimer's disease	ICD-9-CM	Diagnosis
331.1	Frontotemporal dementia	ICD-9-CM	Diagnosis
331.11	Pick's disease	ICD-9-CM	Diagnosis
331.19	Other frontotemporal dementia	ICD-9-CM	Diagnosis
331.2	Senile degeneration of brain	ICD-9-CM	Diagnosis
331.7	Cerebral degeneration in diseases classified elsewhere	ICD-9-CM	Diagnosis
331.8	Other cerebral degeneration	ICD-9-CM	Diagnosis
331.81	Reye's syndrome	ICD-9-CM	Diagnosis
331.82	Dementia with Lewy bodies	ICD-9-CM	Diagnosis
331.83	Mild cognitive impairment, so stated	ICD-9-CM	Diagnosis
331.89	Other cerebral degeneration	ICD-9-CM	Diagnosis
331.9	Unspecified cerebral degeneration	ICD-9-CM	Diagnosis
797	Senility without mention of psychosis	ICD-9-CM	Diagnosis
	Depression		
296.2	Major depressive disorder, single episode	ICD-9-CM	Diagnosis
296.20	Major depressive disorder, single episode, unspecified	ICD-9-CM	Diagnosis
296.21	Major depressive disorder, single episode, mild	ICD-9-CM	Diagnosis
296.22	Major depressive disorder, single episode, moderate	ICD-9-CM	Diagnosis
296.23	Major depressive disorder, single episode, severe, without mention of psychotic behavior	ICD-9-CM	Diagnosis
296.24	Major depressive disorder, single episode, severe, specified as with psychotic behavior	ICD-9-CM	Diagnosis
296.25	Major depressive disorder, single episode, in partial or unspecified remission	ICD-9-CM	Diagnosis
296.26	Major depressive disorder, single episode in full remission	ICD-9-CM	Diagnosis
296.3	Major depressive disorder, recurrent episode	ICD-9-CM	Diagnosis
296.30	Major depressive disorder, recurrent episode, unspecified	ICD-9-CM	Diagnosis
296.31	Major depressive disorder, recurrent episode, mild	ICD-9-CM	Diagnosis
296.32	Major depressive disorder, recurrent episode, moderate	ICD-9-CM	Diagnosis
296.33	Major depressive disorder, recurrent episode, severe, without mention of psychotic behavior	ICD-9-CM	Diagnosis
296.34	Major depressive disorder, recurrent episode, severe, specified as with psychotic behavior	ICD-9-CM	Diagnosis
296.35	Major depressive disorder, recurrent episode, in partial or unspecified remission	ICD-9-CM	Diagnosis
296.36	Major depressive disorder, recurrent episode, in full remission	ICD-9-CM	Diagnosis
300.4	Dysthymic disorder	ICD-9-CM	Diagnosis
311	Depressive disorder, not elsewhere classified	ICD-9-CM	Diagnosis
	End Stage Renal Disease		
36145	Introduction of needle or intracatheter; arteriovenous shunt created for dialysis (cannula, fistula, or graft)	CPT-4	Procedure

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Code	Description	Code Type	Code Category
36800	Insertion of cannula for hemodialysis, other purpose (separate procedure); vein to vein	CPT-4	Procedure
36810	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external (Scribner type)	CPT-4	Procedure
36815	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external revision, or closure	CPT-4	Procedure
36825	Creation of arteriovenous fistula by other than direct arteriovenous anastomosis (separate procedure); autogenous graft	CPT-4	Procedure
36830	Creation of arteriovenous fistula by other than direct arteriovenous anastomosis (separate procedure); nonautogenous graft (eg, biological collagen, thermoplastic graft)	CPT-4	Procedure
36831	Thrombectomy, open, arteriovenous fistula without revision, autogenous or nonautogenous dialysis graft (separate procedure)	CPT-4	Procedure
36832	Revision, open, arteriovenous fistula; without thrombectomy, autogenous or nonautogenous dialysis graft (separate procedure)	CPT-4	Procedure
36833	Revision, open, arteriovenous fistula; with thrombectomy, autogenous or nonautogenous dialysis graft (separate procedure)	CPT-4	Procedure
38.95	Venous catheterization for renal dialysis	ICD-9-CM	Procedure
39.27	Arteriovenostomy for renal dialysis	ICD-9-CM	Procedure
39.42	Revision of arteriovenous shunt for renal dialysis	ICD-9-CM	Procedure
39.43	Removal of arteriovenous shunt for renal dialysis	ICD-9-CM	Procedure
39.53	Repair of arteriovenous fistula	ICD-9-CM	Procedure
39.93	Insertion of vessel-to-vessel cannula	ICD-9-CM	Procedure
39.94	Replacement of vessel-to-vessel cannula	ICD-9-CM	Procedure
39.95	Hemodialysis	ICD-9-CM	Procedure
458.21	Hypotension of hemodialysis	ICD-9-CM	Diagnosis
50323	Backbench standard preparation of cadaver donor renal allograft prior to transplantation, including dissection and removal of perinephric fat, diaphragmatic and retroperitoneal attachments, excision of adrenal gland, and preparation of ureter(s), renal vein(s), and renal artery(s), ligating branches, as necessary	CPT-4	Procedure
50325	Backbench standard preparation of living donor renal allograft (open or laparoscopic) prior to transplantation, including dissection and removal of perinephric fat and preparation of ureter(s), renal vein(s), and renal artery(s), ligating branches, as necessary	CPT-4	Procedure
50327	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; venous anastomosis, each	CPT-4	Procedure
50328	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; arterial anastomosis, each	CPT-4	Procedure
50329	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; ureteral anastomosis, each	CPT-4	Procedure
50340	Recipient nephrectomy (separate procedure)	CPT-4	Procedure
50341	Recipient Nephrectomy (separate Procedure)	CPT-4	Procedure
50360	Renal allotransplantation, implantation of graft; without recipient nephrectomy	CPT-4	Procedure

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Code	Description	Code Type	Code Category
50365	Renal allotransplantation, implantation of graft; with recipient nephrectomy	CPT-4	Procedure
50366	Renal Homotransplantation, Implantation Of Graft	CPT-4	Procedure
54.98	Peritoneal dialysis	ICD-9-CM	Procedure
55.6	Transplant of kidney	ICD-9-CM	Procedure
55.61	Renal autotransplantation	ICD-9-CM	Procedure
55.69	Other kidney transplantation	ICD-9-CM	Procedure
585.5	Chronic kidney disease, Stage V	ICD-9-CM	Diagnosis
585.6	End stage renal disease	ICD-9-CM	Diagnosis
90918	End-stage renal disease (ESRD) related services per full month; for patients younger than two years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	CPT-4	Procedure
90919	End-stage renal disease (ESRD) related services per full month; for patients between two and eleven years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	CPT-4	Procedure
90920	End-stage renal disease (ESRD) related services per full month; for patients between twelve and nineteen years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	CPT-4	Procedure
90921	End-stage renal disease (ESRD) related services per full month; for patients twenty years of age and older	CPT-4	Procedure
90922	End-stage renal disease (ESRD) related services (less than full month), per day; for patients younger than two years of age	CPT-4	Procedure
90923	End-stage renal disease (ESRD) related services (less than full month), per day; for patients between two and eleven years of age	CPT-4	Procedure
90924	End-stage renal disease (ESRD) related services (less than full month), per day; for patients between twelve and nineteen years of age	CPT-4	Procedure
90925	End-stage renal disease (ESRD) related services (less than full month), per day; for patients twenty years of age and older	CPT-4	Procedure
90935	Hemodialysis procedure with single evaluation by a physician or other qualified health care professional	CPT-4	Procedure
90937	Hemodialysis procedure requiring repeated evaluation(s) with or without substantial revision of dialysis prescription	CPT-4	Procedure
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	CPT-4	Procedure
90940	Hemodialysis access flow study to determine blood flow in grafts and arteriovenous fistulae by an indicator method	CPT-4	Procedure
90941	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure
90942	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure
90943	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure
90944	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure

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Code	Description	Code Type	Code Category
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure

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Code	Description	Code Type	Code Category
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
90966	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 20 years of age and older	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
90976	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90977	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90978	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90979	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure

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Code	Description	Code Type	Code Category
90982	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90983	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90984	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90985	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90989	Dialysis training, patient, including helper where applicable, any mode, completed course	CPT-4	Procedure
90993	Dialysis training, patient, including helper where applicable, any mode, course not completed, per training session	CPT-4	Procedure
90995	End Stage Renal Disease (esrd) Related Services, Per Full Month	CPT-4	Procedure
90996	Continuous Arteriovenous Hemofiltration (cavh) (per Day)	CPT-4	Procedure
90997	Hemoperfusion (eg, with activated charcoal or resin)	CPT-4	Procedure
90998	End Stage Renal Disease (esrd) Related Services (less Than Full Month), Per Day	CPT-4	Procedure
90999	Unlisted dialysis procedure, inpatient or outpatient	CPT-4	Procedure
93990	Duplex scan of hemodialysis access (including arterial inflow, body of access and venous outflow)	CPT-4	Procedure
99512	Home visit for hemodialysis	CPT-4	Procedure
996.56	Mechanical complications due to peritoneal dialysis catheter	ICD-9-CM	Diagnosis
996.68	Infection and inflammatory reaction due to peritoneal dialysis catheter	ICD-9-CM	Diagnosis
996.73	Other complications due to renal dialysis device, implant, and graft	ICD-9-CM	Diagnosis
A4653	Peritoneal dialysis catheter anchoring device, belt, each	HCPCS	Procedure
A4656	Needle, any size, each	HCPCS	Procedure
A4657	Syringe, with or without needle, each	HCPCS	Procedure
A4670	Automatic blood pressure monitor	HCPCS	Procedure
A4671	Disposable cycler set used with cycler dialysis machine, each	HCPCS	Procedure
A4672	Drainage extension line, sterile, for dialysis, each	HCPCS	Procedure
A4673	Extension line with easy lock connectors, used with dialysis	HCPCS	Procedure
A4674	Chemicals/antiseptics solution used to clean/sterilize dialysis equipment, per 8 oz	HCPCS	Procedure
A4680	Activated carbon filter for hemodialysis, each	HCPCS	Procedure
A4706	Bicarbonate concentrate, solution, for hemodialysis, per gallon	HCPCS	Procedure
A4707	Bicarbonate concentrate, powder, for hemodialysis, per packet	HCPCS	Procedure
A4708	Acetate concentrate solution, for hemodialysis, per gallon	HCPCS	Procedure
A4709	Acid concentrate, solution, for hemodialysis, per gallon	HCPCS	Procedure
A4712	Water, sterile, for injection, per 10 ml	HCPCS	Procedure
A4714	Treated water (deionized, distilled, or reverse osmosis) for peritoneal dialysis, per gallon	HCPCS	Procedure
A4719	"Y set" tubing for peritoneal dialysis	HCPCS	Procedure
A4720	Dialysate solution, any concentration of dextrose, fluid volume greater than 249 cc, but less than or equal to 999 cc, for peritoneal dialysis	HCPCS	Procedure
A4721	Dialysate solution, any concentration of dextrose, fluid volume greater than 999 cc but less than or equal to 1999 cc, for peritoneal dialysis	HCPCS	Procedure
A4722	Dialysate solution, any concentration of dextrose, fluid volume greater than 1999 cc but less than or equal to 2999 cc, for peritoneal dialysis	HCPCS	Procedure

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Code	Description	Code Type	Code Category
A4723	Dialysate solution, any concentration of dextrose, fluid volume greater than 2999 cc but less than or equal to 3999 cc, for peritoneal dialysis	HCPCS	Procedure
A4724	Dialysate solution, any concentration of dextrose, fluid volume greater than 3999 cc but less than or equal to 4999 cc, for peritoneal dialysis	HCPCS	Procedure
A4725	Dialysate solution, any concentration of dextrose, fluid volume greater than 4999 cc but less than or equal to 5999 cc, for peritoneal dialysis	HCPCS	Procedure
A4726	Dialysate solution, any concentration of dextrose, fluid volume greater than 5999 cc, for peritoneal dialysis	HCPCS	Procedure
A4728	Dialysate solution, nondextrose containing, 500 ml	HCPCS	Procedure
A4730	Fistula cannulation set for hemodialysis, each	HCPCS	Procedure
A4736	Topical anesthetic, for dialysis, per g	HCPCS	Procedure
A4737	Injectable anesthetic, for dialysis, per 10 ml	HCPCS	Procedure
A4740	Shunt accessory, for hemodialysis, any type, each	HCPCS	Procedure
A4750	Blood tubing, arterial or venous, for hemodialysis, each	HCPCS	Procedure
A4755	Blood tubing, arterial and venous combined, for hemodialysis, each	HCPCS	Procedure
A4760	Dialysate solution test kit, for peritoneal dialysis, any type, each	HCPCS	Procedure
A4765	Dialysate concentrate, powder, additive for peritoneal dialysis, per packet	HCPCS	Procedure
A4766	Dialysate concentrate, solution, additive for peritoneal dialysis, per 10 ml	HCPCS	Procedure
A4770	Blood collection tube, vacuum, for dialysis, per 50	HCPCS	Procedure
A4771	Serum clotting time tube, for dialysis, per 50	HCPCS	Procedure
A4773	Occult blood test strips, for dialysis, per 50	HCPCS	Procedure
A4774	Ammonia test strips, for dialysis, per 50	HCPCS	Procedure
A4802	Protamine sulfate, for hemodialysis, per 50 mg	HCPCS	Procedure
A4860	Disposable catheter tips for peritoneal dialysis, per 10	HCPCS	Procedure
A4870	Plumbing and/or electrical work for home hemodialysis equipment	HCPCS	Procedure
A4890	Contracts, repair and maintenance, for hemodialysis equipment	HCPCS	Procedure
A4911	Drain bag/bottle, for dialysis, each	HCPCS	Procedure
A4913	Miscellaneous dialysis supplies, not otherwise specified	HCPCS	Procedure
A4918	Venous pressure clamp, for hemodialysis, each	HCPCS	Procedure
A4928	Surgical mask, per 20	HCPCS	Procedure
A4929	Tourniquet for dialysis, each	HCPCS	Procedure
C1881	Dialysis access system (implantable)	HCPCS	Procedure
E1500	Centrifuge, for dialysis	HCPCS	Procedure
E1520	Heparin infusion pump for hemodialysis	HCPCS	Procedure
E1530	Air bubble detector for hemodialysis, each, replacement	HCPCS	Procedure
E1540	Pressure alarm for hemodialysis, each, replacement	HCPCS	Procedure
E1550	Bath conductivity meter for hemodialysis, each	HCPCS	Procedure
E1560	Blood leak detector for hemodialysis, each, replacement	HCPCS	Procedure
E1570	Adjustable chair, for ESRD patients	HCPCS	Procedure
E1575	Transducer protectors/fluid barriers, for hemodialysis, any size, per 10	HCPCS	Procedure
E1580	Unipuncture control system for hemodialysis	HCPCS	Procedure
E1600	Delivery and/or installation charges for hemodialysis equipment	HCPCS	Procedure
E1610	Reverse osmosis water purification system, for hemodialysis	HCPCS	Procedure
E1615	Deionizer water purification system, for hemodialysis	HCPCS	Procedure
E1620	Blood pump for hemodialysis, replacement	HCPCS	Procedure

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Code	Description	Code Type	Code Category
E1625	Water softening system, for hemodialysis	HCPCS	Procedure
E1634	Peritoneal dialysis clamps, each	HCPCS	Procedure
E1635	Compact (portable) travel hemodialyzer system	HCPCS	Procedure
E1636	Sorbent cartridges, for hemodialysis, per 10	HCPCS	Procedure
E1637	Hemostats, each	HCPCS	Procedure
E1638	Heating pad, for peritoneal dialysis, any size, each	HCPCS	Procedure
E1639	Scale, each	HCPCS	Procedure
E1699	Dialysis equipment, not otherwise specified	HCPCS	Procedure
G0257	Unscheduled or emergency dialysis treatment for an ESRD patient in a hospital outpatient department that is not certified as an ESRD facility	HCPCS	Procedure
G0308	ESRD related services during the course of treatment, for patients under 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 physician visits per month.	HCPCS	Procedure
G0309	ESRD related services during the course of treatment, for patients under 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2 or 3 face-to-face physician visits per month.	HCPCS	Procedure
G0310	ESRD related services during the course of treatment, for patients under 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 physician visit per month	HCPCS	Procedure
G0311	ESRD related services during the course of treatment, for patients between 2 and 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 physician visits per month	HCPCS	Procedure
G0312	ESRD related services during the course of treatment, for patients between 2 and 11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2 or 3 face-to-face physician visits per month	HCPCS	Procedure
G0313	ESRD related services during the course of treatment, for patients between 2 and 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 physician visit per month	HCPCS	Procedure
G0314	ESRD related services during the course of treatment, for patients between 12 and 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 physician visits per month	HCPCS	Procedure
G0315	End Stage Renal disease (ESRD) related services during the course of treatment, for patients between 12 and 19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with two or three face-to-face physician visits per month	HCPCS	Procedure

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Code	Description	Code Type	Code Category
G0316	End Stage Renal disease (ESRD) related services during the course of treatment, for patients between 12 and 19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with one face-to-face physician visit per month	HCPCS	Procedure
G0317	End Stage Renal disease (ESRD) related services during the course of treatment, for patients 20 years of age and over; with four or more face-to-face physician visits per month	HCPCS	Procedure
G0318	ESRD related services during the course of treatment, for patients 20 years of age and over; with 2 or 3 face-to-face physician visits per month	HCPCS	Procedure
G0319	End Stage Renal disease (ESRD) related services during the course of treatment, for patients 20 years of age and over; with one face-to-face physician visit per month	HCPCS	Procedure
G0320	ESRD related services for home dialysis patients per full month; for patients under 2 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	HCPCS	Procedure
G0321	ESRD related services for home dialysis patients per full month; for patients 2 to 11 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	HCPCS	Procedure
G0322	End Stage Renal disease (ESRD) related services for home dialysis patients per full month; for patients 12 to 19 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	HCPCS	Procedure
G0323	End Stage Renal disease (ESRD) related services for home dialysis patients per full month; for patients 20 years of age and older	HCPCS	Procedure
G0324	ESRD related services for home dialysis (less than full month), per day; for patients under 2 years of age	HCPCS	Procedure
G0325	ESRD related services for home dialysis (less than full month), per day; for patients between 2 and 11 years of age	HCPCS	Procedure
G0326	ESRD related services for home dialysis (less than full month), per day; for patients between twelve and nineteen years of age	HCPCS	Procedure
G0327	ESRD related services for home dialysis (less than full month), per day; for patients twenty years of age and over	HCPCS	Procedure
G8727	Patient receiving hemodialysis, peritoneal dialysis or kidney transplantation	HCPCS	Procedure
G9013	ESRD demo basic bundle Level I	HCPCS	Procedure
G9014	ESRD demo expanded bundle including venous access and related services	HCPCS	Procedure
J0635	Injection, calcitriol, 1 mcg amp.	HCPCS	Procedure
J0636	Injection, calcitriol, 0.1 mcg	HCPCS	Procedure
S2065	Simultaneous pancreas kidney transplantation	HCPCS	Procedure

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Code	Description	Code Type	Code Category
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	HCPCS	Procedure
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	HCPCS	Procedure
V42.0	Kidney replaced by transplant	ICD-9-CM	Diagnosis
V45.1	Renal dialysis status	ICD-9-CM	Diagnosis
V45.11	Renal dialysis status	ICD-9-CM	Diagnosis
V45.12	Noncompliance with renal dialysis	ICD-9-CM	Diagnosis
V56	Encounter for dialysis and dialysis catheter care	ICD-9-CM	Diagnosis
V56.0	Encounter for extracorporeal dialysis	ICD-9-CM	Diagnosis
V56.1	Fitting and adjustment of extracorporeal dialysis catheter	ICD-9-CM	Diagnosis
V56.2	Fitting and adjustment of peritoneal dialysis catheter	ICD-9-CM	Diagnosis
V56.3	Encounter for adequacy testing for dialysis	ICD-9-CM	Diagnosis
V56.31	Encounter for adequacy testing for hemodialysis	ICD-9-CM	Diagnosis
V56.32	Encounter for adequacy testing for peritoneal dialysis	ICD-9-CM	Diagnosis
V56.8	Encounter other dialysis	ICD-9-CM	Diagnosis
	Fracture		
733.1	Pathologic fracture	ICD-9-CM	Diagnosis
733.10	Pathologic fracture, unspecified site	ICD-9-CM	Diagnosis
733.11	Pathologic fracture of humerus	ICD-9-CM	Diagnosis
733.12	Pathologic fracture of distal radius and ulna	ICD-9-CM	Diagnosis
733.13	Pathologic fracture of vertebrae	ICD-9-CM	Diagnosis
733.14	Pathologic fracture of neck of femur	ICD-9-CM	Diagnosis
733.15	Pathologic fracture of other specified part of femur	ICD-9-CM	Diagnosis
733.16	Pathologic fracture of tibia and fibula	ICD-9-CM	Diagnosis
733.19	Pathologic fracture of other specified site	ICD-9-CM	Diagnosis
733.93	Stress fracture of tibia or fibula	ICD-9-CM	Diagnosis
733.94	Stress fracture of the metatarsals	ICD-9-CM	Diagnosis
733.95	Stress fracture of other bone	ICD-9-CM	Diagnosis
733.96	Stress fracture of femoral neck	ICD-9-CM	Diagnosis
733.97	Stress fracture of shaft of femur	ICD-9-CM	Diagnosis
733.98	Stress fracture of pelvis	ICD-9-CM	Diagnosis
79.01	Closed reduction of fracture of humerus without internal fixation	ICD-9-CM	Procedure
79.02	Closed reduction of fracture of radius and ulna without internal fixation	ICD-9-CM	Procedure
79.03	Closed reduction of fracture of carpals and metacarpals without internal fixation	ICD-9-CM	Procedure
79.05	Closed reduction of fracture of femur without internal fixation	ICD-9-CM	Procedure
79.06	Closed reduction of fracture of tibia and fibula without internal fixation	ICD-9-CM	Procedure
79.07	Closed reduction of fracture of tarsals and metatarsals without internal fixation	ICD-9-CM	Procedure
79.11	Closed reduction of fracture of humerus with internal fixation	ICD-9-CM	Procedure
79.12	Closed reduction of fracture of radius and ulna with internal fixation	ICD-9-CM	Procedure

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Code	Description	Code Type	Code Category
79.13	Closed reduction of fracture of carpals and metacarpals with internal fixation	ICD-9-CM	Procedure
79.15	Closed reduction of fracture of femur with internal fixation	ICD-9-CM	Procedure
79.16	Closed reduction of fracture of tibia and fibula with internal fixation	ICD-9-CM	Procedure
79.17	Closed reduction of fracture of tarsals and metatarsals with internal fixation	ICD-9-CM	Procedure
79.21	Open reduction of fracture of humerus without internal fixation	ICD-9-CM	Procedure
79.22	Open reduction of fracture of radius and ulna without internal fixation	ICD-9-CM	Procedure
79.23	Open reduction of fracture of carpals and metacarpals without internal fixation	ICD-9-CM	Procedure
79.25	Open reduction of fracture of femur without internal fixation	ICD-9-CM	Procedure
79.26	Open reduction of fracture of tibia and fibula without internal fixation	ICD-9-CM	Procedure
79.27	Open reduction of fracture of tarsals and metatarsals without internal fixation	ICD-9-CM	Procedure
79.31	Open reduction of fracture of humerus with internal fixation	ICD-9-CM	Procedure
79.32	Open reduction of fracture of radius and ulna with internal fixation	ICD-9-CM	Procedure
79.33	Open reduction of fracture of carpals and metacarpals with internal fixation	ICD-9-CM	Procedure
79.35	Open reduction of fracture of femur with internal fixation	ICD-9-CM	Procedure
79.36	Open reduction of fracture of tibia and fibula with internal fixation	ICD-9-CM	Procedure
79.37	Open reduction of fracture of tarsals and metatarsals with internal fixation	ICD-9-CM	Procedure
79.61	Debridement of open fracture of humerus	ICD-9-CM	Procedure
79.62	Debridement of open fracture of radius and ulna	ICD-9-CM	Procedure
79.63	Debridement of open fracture of carpals and metacarpals	ICD-9-CM	Procedure
79.65	Debridement of open fracture of femur	ICD-9-CM	Procedure
79.66	Debridement of open fracture of tibia and fibula	ICD-9-CM	Procedure
79.67	Debridement of open fracture of tarsals and metatarsals	ICD-9-CM	Procedure
805	Fracture of vertebral column without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.0	Closed fracture of cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.00	Closed fracture of cervical vertebra, unspecified level without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.01	Closed fracture of first cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.02	Closed fracture of second cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.03	Closed fracture of third cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.04	Closed fracture of fourth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.05	Closed fracture of fifth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.06	Closed fracture of sixth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
805.07	Closed fracture of seventh cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.08	Closed fracture of multiple cervical vertebrae without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.1	Open fracture of cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.10	Open fracture of cervical vertebra, unspecified level without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.11	Open fracture of first cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.12	Open fracture of second cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.13	Open fracture of third cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.14	Open fracture of fourth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.15	Open fracture of fifth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.16	Open fracture of sixth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.17	Open fracture of seventh cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.18	Open fracture of multiple cervical vertebrae without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.2	Closed fracture of dorsal (thoracic) vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.3	Open fracture of dorsal (thoracic) vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.4	Closed fracture of lumbar vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.5	Open fracture of lumbar vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.6	Closed fracture of sacrum and coccyx without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.7	Open fracture of sacrum and coccyx without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.8	Closed fracture of unspecified part of vertebral column without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.9	Open fracture of unspecified part of vertebral column without mention of spinal cord injury	ICD-9-CM	Diagnosis
806	Fracture of vertebral column with spinal cord injury	ICD-9-CM	Diagnosis
806.0	Closed fracture of cervical vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.00	Closed fracture of C1-C4 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.01	Closed fracture of C1-C4 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.02	Closed fracture of C1-C4 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.03	Closed fracture of C1-C4 level with central cord syndrome	ICD-9-CM	Diagnosis
806.04	Closed fracture of C1-C4 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.05	Closed fracture of C5-C7 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
806.06	Closed fracture of C5-C7 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.07	Closed fracture of C5-C7 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.08	Closed fracture of C5-C7 level with central cord syndrome	ICD-9-CM	Diagnosis
806.09	Closed fracture of C5-C7 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.1	Open fracture of cervical vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.10	Open fracture of C1-C4 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.11	Open fracture of C1-C4 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.12	Open fracture of C1-C4 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.13	Open fracture of C1-C4 level with central cord syndrome	ICD-9-CM	Diagnosis
806.14	Open fracture of C1-C4 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.15	Open fracture of C5-C7 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.16	Open fracture of C5-C7 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.17	Open fracture of C5-C7 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.18	Open fracture of C5-C7 level with central cord syndrome	ICD-9-CM	Diagnosis
806.19	Open fracture of C5-C7 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.2	Closed fracture of dorsal (thoracic) vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.20	Closed fracture of T1-T6 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.21	Closed fracture of T1-T6 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.22	Closed fracture of T1-T6 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.23	Closed fracture of T1-T6 level with central cord syndrome	ICD-9-CM	Diagnosis
806.24	Closed fracture of T1-T6 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.25	Closed fracture of T7-T12 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.26	Closed fracture of T7-T12 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.27	Closed fracture of T7-T12 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.28	Closed fracture of T7-T12 level with central cord syndrome	ICD-9-CM	Diagnosis
806.29	Closed fracture of T7-T12 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.3	Open fracture of dorsal vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.30	Open fracture of T1-T6 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.31	Open fracture of T1-T6 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.32	Open fracture of T1-T6 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.33	Open fracture of T1-T6 level with central cord syndrome	ICD-9-CM	Diagnosis
806.34	Open fracture of T1-T6 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.35	Open fracture of T7-T12 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.36	Open fracture of T7-T12 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.37	Open fracture of T7-T12 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.38	Open fracture of T7-T12 level with central cord syndrome	ICD-9-CM	Diagnosis
806.39	Open fracture of T7-T12 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.4	Closed fracture of lumbar spine with spinal cord injury	ICD-9-CM	Diagnosis
806.5	Open fracture of lumbar spine with spinal cord injury	ICD-9-CM	Diagnosis
806.6	Closed fracture of sacrum and coccyx with spinal cord injury	ICD-9-CM	Diagnosis
806.60	Closed fracture of sacrum and coccyx with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.61	Closed fracture of sacrum and coccyx with complete cauda equina lesion	ICD-9-CM	Diagnosis
806.62	Closed fracture of sacrum and coccyx with other cauda equina injury	ICD-9-CM	Diagnosis
806.69	Closed fracture of sacrum and coccyx with other spinal cord injury	ICD-9-CM	Diagnosis
806.7	Open fracture of sacrum and coccyx with spinal cord injury	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
806.70	Open fracture of sacrum and coccyx with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.71	Open fracture of sacrum and coccyx with complete cauda equina lesion	ICD-9-CM	Diagnosis
806.72	Open fracture of sacrum and coccyx with other cauda equina injury	ICD-9-CM	Diagnosis
806.79	Open fracture of sacrum and coccyx with other spinal cord injury	ICD-9-CM	Diagnosis
806.8	Closed fracture of unspecified vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.9	Open fracture of unspecified vertebra with spinal cord injury	ICD-9-CM	Diagnosis
807	Fracture of rib(s), sternum, larynx, and trachea	ICD-9-CM	Diagnosis
807.0	Closed fracture of rib(s)	ICD-9-CM	Diagnosis
807.00	Closed fracture of rib(s), unspecified	ICD-9-CM	Diagnosis
807.01	Closed fracture of one rib	ICD-9-CM	Diagnosis
807.02	Closed fracture of two ribs	ICD-9-CM	Diagnosis
807.03	Closed fracture of three ribs	ICD-9-CM	Diagnosis
807.04	Closed fracture of four ribs	ICD-9-CM	Diagnosis
807.05	Closed fracture of five ribs	ICD-9-CM	Diagnosis
807.06	Closed fracture of six ribs	ICD-9-CM	Diagnosis
807.07	Closed fracture of seven ribs	ICD-9-CM	Diagnosis
807.08	Closed fracture of eight or more ribs	ICD-9-CM	Diagnosis
807.09	Closed fracture of multiple ribs, unspecified	ICD-9-CM	Diagnosis
807.1	Open fracture of rib(s)	ICD-9-CM	Diagnosis
807.10	Open fracture of rib(s), unspecified	ICD-9-CM	Diagnosis
807.11	Open fracture of one rib	ICD-9-CM	Diagnosis
807.12	Open fracture of two ribs	ICD-9-CM	Diagnosis
807.13	Open fracture of three ribs	ICD-9-CM	Diagnosis
807.14	Open fracture of four ribs	ICD-9-CM	Diagnosis
807.15	Open fracture of five ribs	ICD-9-CM	Diagnosis
807.16	Open fracture of six ribs	ICD-9-CM	Diagnosis
807.17	Open fracture of seven ribs	ICD-9-CM	Diagnosis
807.18	Open fracture of eight or more ribs	ICD-9-CM	Diagnosis
807.19	Open fracture of multiple ribs, unspecified	ICD-9-CM	Diagnosis
807.2	Closed fracture of sternum	ICD-9-CM	Diagnosis
807.3	Open fracture of sternum	ICD-9-CM	Diagnosis
807.4	Flail chest	ICD-9-CM	Diagnosis
808	Fracture of pelvis	ICD-9-CM	Diagnosis
808.0	Closed fracture of acetabulum	ICD-9-CM	Diagnosis
808.1	Open fracture of acetabulum	ICD-9-CM	Diagnosis
808.2	Closed fracture of pubis	ICD-9-CM	Diagnosis
808.3	Open fracture of pubis	ICD-9-CM	Diagnosis
808.4	Closed fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.41	Closed fracture of ilium	ICD-9-CM	Diagnosis
808.42	Closed fracture of ischium	ICD-9-CM	Diagnosis
808.43	Multiple closed pelvic fractures with disruption of pelvic circle	ICD-9-CM	Diagnosis
808.44	Multiple closed pelvic fractures without disruption of pelvic circle	ICD-9-CM	Diagnosis
808.49	Closed fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.5	Open fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.51	Open fracture of ilium	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
808.52	Open fracture of ischium	ICD-9-CM	Diagnosis
808.53	Multiple open pelvic fractures with disruption of pelvic circle	ICD-9-CM	Diagnosis
808.54	Multiple open pelvic fractures without disruption of pelvic circle	ICD-9-CM	Diagnosis
808.59	Open fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.8	Unspecified closed fracture of pelvis	ICD-9-CM	Diagnosis
808.9	Unspecified open fracture of pelvis	ICD-9-CM	Diagnosis
809	Ill-defined fractures of bones of trunk	ICD-9-CM	Diagnosis
809.0	Fracture of bones of trunk, closed	ICD-9-CM	Diagnosis
809.1	Fracture of bones of trunk, open	ICD-9-CM	Diagnosis
81.65	Percutaneous vertebroplasty	ICD-9-CM	Diagnosis
81.66	Percutaneous vertebral augmentation	ICD-9-CM	Diagnosis
810	Fracture of clavicle	ICD-9-CM	Diagnosis
810.0	Closed fracture of clavicle	ICD-9-CM	Diagnosis
810.00	Unspecified part of closed fracture of clavicle	ICD-9-CM	Diagnosis
810.01	Closed fracture of sternal end of clavicle	ICD-9-CM	Diagnosis
810.02	Closed fracture of shaft of clavicle	ICD-9-CM	Diagnosis
810.03	Closed fracture of acromial end of clavicle	ICD-9-CM	Diagnosis
810.1	Open fracture of clavicle	ICD-9-CM	Diagnosis
810.10	Unspecified part of open fracture of clavicle	ICD-9-CM	Diagnosis
810.11	Open fracture of sternal end of clavicle	ICD-9-CM	Diagnosis
810.12	Open fracture of shaft of clavicle	ICD-9-CM	Diagnosis
810.13	Open fracture of acromial end of clavicle	ICD-9-CM	Diagnosis
811	Fracture of scapula	ICD-9-CM	Diagnosis
811.0	Closed fracture of scapula	ICD-9-CM	Diagnosis
811.00	Closed fracture of unspecified part of scapula	ICD-9-CM	Diagnosis
811.01	Closed fracture of acromial process of scapula	ICD-9-CM	Diagnosis
811.02	Closed fracture of coracoid process of scapula	ICD-9-CM	Diagnosis
811.03	Closed fracture of glenoid cavity and neck of scapula	ICD-9-CM	Diagnosis
811.09	Closed fracture of other part of scapula	ICD-9-CM	Diagnosis
811.1	Open fracture of scapula	ICD-9-CM	Diagnosis
811.10	Open fracture of unspecified part of scapula	ICD-9-CM	Diagnosis
811.11	Open fracture of acromial process of scapula	ICD-9-CM	Diagnosis
811.12	Open fracture of coracoid process	ICD-9-CM	Diagnosis
811.13	Open fracture of glenoid cavity and neck of scapula	ICD-9-CM	Diagnosis
811.19	Open fracture of other part of scapula	ICD-9-CM	Diagnosis
812	Fracture of humerus	ICD-9-CM	Diagnosis
812.0	Closed fracture of upper end of humerus	ICD-9-CM	Diagnosis
812.00	Closed fracture of unspecified part of upper end of humerus	ICD-9-CM	Diagnosis
812.01	Closed fracture of surgical neck of humerus	ICD-9-CM	Diagnosis
812.02	Closed fracture of anatomical neck of humerus	ICD-9-CM	Diagnosis
812.03	Closed fracture of greater tuberosity of humerus	ICD-9-CM	Diagnosis
812.09	Other closed fractures of upper end of humerus	ICD-9-CM	Diagnosis
812.1	Open fracture of upper end of humerus	ICD-9-CM	Diagnosis
812.10	Open fracture of unspecified part of upper end of humerus	ICD-9-CM	Diagnosis
812.11	Open fracture of surgical neck of humerus	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
812.12	Open fracture of anatomical neck of humerus	ICD-9-CM	Diagnosis
812.13	Open fracture of greater tuberosity of humerus	ICD-9-CM	Diagnosis
812.19	Other open fracture of upper end of humerus	ICD-9-CM	Diagnosis
812.2	Closed fracture of shaft or unspecified part of humerus	ICD-9-CM	Diagnosis
812.20	Closed fracture of unspecified part of humerus	ICD-9-CM	Diagnosis
812.21	Closed fracture of shaft of humerus	ICD-9-CM	Diagnosis
812.3	Open fracture of shaft or unspecified part of humerus	ICD-9-CM	Diagnosis
812.30	Open fracture of unspecified part of humerus	ICD-9-CM	Diagnosis
812.31	Open fracture of shaft of humerus	ICD-9-CM	Diagnosis
812.4	Closed fracture of lower end of humerus	ICD-9-CM	Diagnosis
812.40	Closed fracture of unspecified part of lower end of humerus	ICD-9-CM	Diagnosis
812.41	Closed fracture of supracondylar humerus	ICD-9-CM	Diagnosis
812.42	Closed fracture of lateral condyle of humerus	ICD-9-CM	Diagnosis
812.43	Closed fracture of medial condyle of humerus	ICD-9-CM	Diagnosis
812.44	Closed fracture of unspecified condyle(s) of humerus	ICD-9-CM	Diagnosis
812.49	Other closed fracture of lower end of humerus	ICD-9-CM	Diagnosis
812.5	Open fracture of lower end of humerus	ICD-9-CM	Diagnosis
812.50	Open fracture of unspecified part of lower end of humerus	ICD-9-CM	Diagnosis
812.51	Open fracture of supracondylar humerus	ICD-9-CM	Diagnosis
812.52	Open fracture of lateral condyle of humerus	ICD-9-CM	Diagnosis
812.53	Open fracture of medial condyle of humerus	ICD-9-CM	Diagnosis
812.54	Open fracture of unspecified condyle(s) of humerus	ICD-9-CM	Diagnosis
812.59	Other open fracture of lower end of humerus	ICD-9-CM	Diagnosis
813	Fracture of radius and ulna	ICD-9-CM	Diagnosis
813.0	Closed fracture of upper end of radius and ulna	ICD-9-CM	Diagnosis
813.00	Unspecified fracture of radius and ulna, upper end of forearm, closed	ICD-9-CM	Diagnosis
813.01	Closed fracture of olecranon process of ulna	ICD-9-CM	Diagnosis
813.02	Closed fracture of coronoid process of ulna	ICD-9-CM	Diagnosis
813.03	Closed Monteggia's fracture	ICD-9-CM	Diagnosis
813.04	Other and unspecified closed fractures of proximal end of ulna (alone)	ICD-9-CM	Diagnosis
813.05	Closed fracture of head of radius	ICD-9-CM	Diagnosis
813.06	Closed fracture of neck of radius	ICD-9-CM	Diagnosis
813.07	Other and unspecified closed fractures of proximal end of radius (alone)	ICD-9-CM	Diagnosis
813.08	Closed fracture of radius with ulna, upper end (any part)	ICD-9-CM	Diagnosis
813.1	Open fracture of upper end of radius and ulna	ICD-9-CM	Diagnosis
813.10	Unspecified open fracture of upper end of forearm	ICD-9-CM	Diagnosis
813.11	Open fracture of olecranon process of ulna	ICD-9-CM	Diagnosis
813.12	Open fracture of coronoid process of ulna	ICD-9-CM	Diagnosis
813.13	Open Monteggia's fracture	ICD-9-CM	Diagnosis
813.14	Other and unspecified open fractures of proximal end of ulna (alone)	ICD-9-CM	Diagnosis
813.15	Open fracture of head of radius	ICD-9-CM	Diagnosis
813.16	Open fracture of neck of radius	ICD-9-CM	Diagnosis
813.17	Other and unspecified open fractures of proximal end of radius (alone)	ICD-9-CM	Diagnosis
813.18	Open fracture of radius with ulna, upper end (any part)	ICD-9-CM	Diagnosis
813.2	Closed fracture of shaft of radius and ulna	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
813.20	Unspecified closed fracture of shaft of radius or ulna	ICD-9-CM	Diagnosis
813.21	Closed fracture of shaft of radius (alone)	ICD-9-CM	Diagnosis
813.22	Closed fracture of shaft of ulna (alone)	ICD-9-CM	Diagnosis
813.23	Closed fracture of shaft of radius with ulna	ICD-9-CM	Diagnosis
813.3	Open fracture of shaft of radius and ulna	ICD-9-CM	Diagnosis
813.30	Unspecified open fracture of shaft of radius or ulna	ICD-9-CM	Diagnosis
813.31	Open fracture of shaft of radius (alone)	ICD-9-CM	Diagnosis
813.32	Open fracture of shaft of ulna (alone)	ICD-9-CM	Diagnosis
813.33	Open fracture of shaft of radius with ulna	ICD-9-CM	Diagnosis
813.4	Closed fracture of lower end of radius and ulna	ICD-9-CM	Diagnosis
813.40	Unspecified closed fracture of lower end of forearm	ICD-9-CM	Diagnosis
813.41	Closed Colles' fracture	ICD-9-CM	Diagnosis
813.42	Other closed fractures of distal end of radius (alone)	ICD-9-CM	Diagnosis
813.43	Closed fracture of distal end of ulna (alone)	ICD-9-CM	Diagnosis
813.44	Closed fracture of lower end of radius with ulna	ICD-9-CM	Diagnosis
813.45	Torus fracture of radius (alone)	ICD-9-CM	Diagnosis
813.46	Torus fracture of ulna (alone)	ICD-9-CM	Diagnosis
813.47	Torus fracture of radius and ulna	ICD-9-CM	Diagnosis
813.5	Open fracture of lower end of radius and ulna	ICD-9-CM	Diagnosis
813.50	Unspecified open fracture of lower end of forearm	ICD-9-CM	Diagnosis
813.51	Open Colles' fracture	ICD-9-CM	Diagnosis
813.52	Other open fractures of distal end of radius (alone)	ICD-9-CM	Diagnosis
813.53	Open fracture of distal end of ulna (alone)	ICD-9-CM	Diagnosis
813.54	Open fracture of lower end of radius with ulna	ICD-9-CM	Diagnosis
813.8	Closed fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
813.80	Closed fracture of unspecified part of forearm	ICD-9-CM	Diagnosis
813.81	Closed fracture of unspecified part of radius (alone)	ICD-9-CM	Diagnosis
813.82	Closed fracture of unspecified part of ulna (alone)	ICD-9-CM	Diagnosis
813.83	Closed fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
813.9	Open fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
813.90	Open fracture of unspecified part of forearm	ICD-9-CM	Diagnosis
813.91	Open fracture of unspecified part of radius (alone)	ICD-9-CM	Diagnosis
813.92	Open fracture of unspecified part of ulna (alone)	ICD-9-CM	Diagnosis
813.93	Open fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
814	Fracture of carpal bone(s)	ICD-9-CM	Diagnosis
814.0	Closed fractures of carpal bones	ICD-9-CM	Diagnosis
814.00	Unspecified closed fracture of carpal bone	ICD-9-CM	Diagnosis
814.01	Closed fracture of navicular (scaphoid) bone of wrist	ICD-9-CM	Diagnosis
814.02	Closed fracture of lunate (semilunar) bone of wrist	ICD-9-CM	Diagnosis
814.03	Closed fracture of triquetral (cuneiform) bone of wrist	ICD-9-CM	Diagnosis
814.04	Closed fracture of pisiform bone of wrist	ICD-9-CM	Diagnosis
814.05	Closed fracture of trapezium bone (larger multangular) of wrist	ICD-9-CM	Diagnosis
814.06	Closed fracture of trapezoid bone (smaller multangular) of wrist	ICD-9-CM	Diagnosis
814.07	Closed fracture of capitate bone (os magnum) of wrist	ICD-9-CM	Diagnosis
814.08	Closed fracture of hamate (unciform) bone of wrist	ICD-9-CM	Diagnosis

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Code	Description	Code Type	Code Category
814.09	Closed fracture of other bone of wrist	ICD-9-CM	Diagnosis
814.1	Open fractures of carpal bones	ICD-9-CM	Diagnosis
814.10	Unspecified open fracture of carpal bone	ICD-9-CM	Diagnosis
814.11	Open fracture of navicular (scaphoid) bone of wrist	ICD-9-CM	Diagnosis
814.12	Open fracture of lunate (semilunar) bone of wrist	ICD-9-CM	Diagnosis
814.13	Open fracture of triquetral (cuneiform) bone of wrist	ICD-9-CM	Diagnosis
814.14	Open fracture of pisiform bone of wrist	ICD-9-CM	Diagnosis
814.15	Open fracture of trapezium bone (larger multangular) of wrist	ICD-9-CM	Diagnosis
814.16	Open fracture of trapezoid bone (smaller multangular) of wrist	ICD-9-CM	Diagnosis
814.17	Open fracture of capitate bone (os magnum) of wrist	ICD-9-CM	Diagnosis
814.18	Open fracture of hamate (unciform) bone of wrist	ICD-9-CM	Diagnosis
814.19	Open fracture of other bone of wrist	ICD-9-CM	Diagnosis
815	Fracture of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.0	Closed fracture of metacarpal bones	ICD-9-CM	Diagnosis
815.00	Closed fracture of metacarpal bone(s), site unspecified	ICD-9-CM	Diagnosis
815.01	Closed fracture of base of thumb (first) metacarpal bone(s)	ICD-9-CM	Diagnosis
815.02	Closed fracture of base of other metacarpal bone(s)	ICD-9-CM	Diagnosis
815.03	Closed fracture of shaft of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.04	Closed fracture of neck of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.09	Closed fracture of multiple sites of metacarpus	ICD-9-CM	Diagnosis
815.1	Open fracture of metacarpal bones	ICD-9-CM	Diagnosis
815.10	Open fracture of metacarpal bone(s), site unspecified	ICD-9-CM	Diagnosis
815.11	Open fracture of base of thumb (first) metacarpal bone(s)	ICD-9-CM	Diagnosis
815.12	Open fracture of base of other metacarpal bone(s)	ICD-9-CM	Diagnosis
815.13	Open fracture of shaft of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.14	Open fracture of neck of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.19	Open fracture of multiple sites of metacarpus	ICD-9-CM	Diagnosis
818	Ill-defined fractures of upper limb	ICD-9-CM	Diagnosis
818.0	Ill-defined closed fractures of upper limb	ICD-9-CM	Diagnosis
818.1	Ill-defined open fractures of upper limb	ICD-9-CM	Diagnosis
819	Multiple fractures involving both upper limbs, and upper limb with rib(s) and sternum	ICD-9-CM	Diagnosis
819.0	Multiple closed fractures involving both upper limbs, and upper limb with rib(s) and sternum	ICD-9-CM	Diagnosis
819.1	Multiple open fractures involving both upper limbs, and upper limb with rib(s) and sternum	ICD-9-CM	Diagnosis
820	Fracture of neck of femur	ICD-9-CM	Diagnosis
820.0	Closed transcervical fracture	ICD-9-CM	Diagnosis
820.00	Closed fracture of unspecified intracapsular section of neck of femur	ICD-9-CM	Diagnosis
820.01	Closed fracture of epiphysis (separation) (upper) of neck of femur	ICD-9-CM	Diagnosis
820.02	Closed fracture of midcervical section of femur	ICD-9-CM	Diagnosis
820.03	Closed fracture of base of neck of femur	ICD-9-CM	Diagnosis
820.09	Other closed transcervical fracture of femur	ICD-9-CM	Diagnosis
820.1	Open transcervical fracture	ICD-9-CM	Diagnosis
820.10	Open fracture of unspecified intracapsular section of neck of femur	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
820.11	Open fracture of epiphysis (separation) (upper) of neck of femur	ICD-9-CM	Diagnosis
820.12	Open fracture of midcervical section of femur	ICD-9-CM	Diagnosis
820.13	Open fracture of base of neck of femur	ICD-9-CM	Diagnosis
820.19	Other open transcervical fracture of femur	ICD-9-CM	Diagnosis
820.2	Closed pertrochanteric fracture of femur	ICD-9-CM	Diagnosis
820.20	Closed fracture of unspecified trochanteric section of femur	ICD-9-CM	Diagnosis
820.21	Closed fracture of intertrochanteric section of femur	ICD-9-CM	Diagnosis
820.22	Closed fracture of subtrochanteric section of femur	ICD-9-CM	Diagnosis
820.3	Open pertrochanteric fracture of femur	ICD-9-CM	Diagnosis
820.30	Open fracture of unspecified trochanteric section of femur	ICD-9-CM	Diagnosis
820.31	Open fracture of intertrochanteric section of femur	ICD-9-CM	Diagnosis
820.32	Open fracture of subtrochanteric section of femur	ICD-9-CM	Diagnosis
820.8	Closed fracture of unspecified part of neck of femur	ICD-9-CM	Diagnosis
820.9	Open fracture of unspecified part of neck of femur	ICD-9-CM	Diagnosis
821	Fracture of other and unspecified parts of femur	ICD-9-CM	Diagnosis
821.0	Closed fracture of shaft or unspecified part of femur	ICD-9-CM	Diagnosis
821.00	Closed fracture of unspecified part of femur	ICD-9-CM	Diagnosis
821.01	Closed fracture of shaft of femur	ICD-9-CM	Diagnosis
821.1	Open fracture of shaft or unspecified part of femur	ICD-9-CM	Diagnosis
821.10	Open fracture of unspecified part of femur	ICD-9-CM	Diagnosis
821.11	Open fracture of shaft of femur	ICD-9-CM	Diagnosis
821.2	Closed fracture of lower end of femur	ICD-9-CM	Diagnosis
821.20	Closed fracture of unspecified part of lower end of femur	ICD-9-CM	Diagnosis
821.21	Closed fracture of femoral condyle	ICD-9-CM	Diagnosis
821.22	Closed fracture of lower epiphysis of femur	ICD-9-CM	Diagnosis
821.23	Closed supracondylar fracture of femur	ICD-9-CM	Diagnosis
821.29	Other closed fracture of lower end of femur	ICD-9-CM	Diagnosis
821.3	Open fracture of lower end of femur	ICD-9-CM	Diagnosis
821.30	Open fracture of unspecified part of lower end of femur	ICD-9-CM	Diagnosis
821.31	Open fracture of femoral condyle	ICD-9-CM	Diagnosis
821.32	Open fracture of lower epiphysis of femur	ICD-9-CM	Diagnosis
821.33	Open supracondylar fracture of femur	ICD-9-CM	Diagnosis
821.39	Other open fracture of lower end of femur	ICD-9-CM	Diagnosis
822	Fracture of patella	ICD-9-CM	Diagnosis
822.0	Closed fracture of patella	ICD-9-CM	Diagnosis
822.1	Open fracture of patella	ICD-9-CM	Diagnosis
823	Fracture of tibia and fibula	ICD-9-CM	Diagnosis
823.0	Closed fracture of upper end of tibia and fibula	ICD-9-CM	Diagnosis
823.00	Closed fracture of upper end of tibia	ICD-9-CM	Diagnosis
823.01	Closed fracture of upper end of fibula	ICD-9-CM	Diagnosis
823.02	Closed fracture of upper end of fibula with tibia	ICD-9-CM	Diagnosis
823.1	Open fracture of upper end of tibia and fibula	ICD-9-CM	Diagnosis
823.10	Open fracture of upper end of tibia	ICD-9-CM	Diagnosis
823.11	Open fracture of upper end of fibula	ICD-9-CM	Diagnosis
823.12	Open fracture of upper end of fibula with tibia	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
823.2	Closed fracture of shaft of tibia and fibula	ICD-9-CM	Diagnosis
823.20	Closed fracture of shaft of tibia	ICD-9-CM	Diagnosis
823.21	Closed fracture of shaft of fibula	ICD-9-CM	Diagnosis
823.22	Closed fracture of shaft of fibula with tibia	ICD-9-CM	Diagnosis
823.3	Open fracture of shaft of tibia and fibula	ICD-9-CM	Diagnosis
823.30	Open fracture of shaft of tibia	ICD-9-CM	Diagnosis
823.31	Open fracture of shaft of fibula	ICD-9-CM	Diagnosis
823.32	Open fracture of shaft of fibula with tibia	ICD-9-CM	Diagnosis
823.4	Torus fracture of tibia and fibula	ICD-9-CM	Diagnosis
823.40	Torus fracture of tibia alone	ICD-9-CM	Diagnosis
823.41	Torus fracture of fibula alone	ICD-9-CM	Diagnosis
823.42	Torus fracture of fibula with tibia	ICD-9-CM	Diagnosis
823.8	Closed fracture of unspecified part of tibia and fibula	ICD-9-CM	Diagnosis
823.80	Closed fracture of unspecified part of tibia	ICD-9-CM	Diagnosis
823.81	Closed fracture of unspecified part of fibula	ICD-9-CM	Diagnosis
823.82	Closed fracture of unspecified part of fibula with tibia	ICD-9-CM	Diagnosis
823.9	Open fracture of unspecified part of tibia and fibula	ICD-9-CM	Diagnosis
823.90	Open fracture of unspecified part of tibia	ICD-9-CM	Diagnosis
823.91	Open fracture of unspecified part of fibula	ICD-9-CM	Diagnosis
823.92	Open fracture of unspecified part of fibula with tibia	ICD-9-CM	Diagnosis
824	Fracture of ankle	ICD-9-CM	Diagnosis
824.0	Closed fracture of medial malleolus	ICD-9-CM	Diagnosis
824.1	Open fracture of medial malleolus	ICD-9-CM	Diagnosis
824.2	Closed fracture of lateral malleolus	ICD-9-CM	Diagnosis
824.3	Open fracture of lateral malleolus	ICD-9-CM	Diagnosis
824.4	Closed bimalleolar fracture	ICD-9-CM	Diagnosis
824.5	Open bimalleolar fracture	ICD-9-CM	Diagnosis
824.6	Closed trimalleolar fracture	ICD-9-CM	Diagnosis
824.7	Open trimalleolar fracture	ICD-9-CM	Diagnosis
824.8	Unspecified closed fracture of ankle	ICD-9-CM	Diagnosis
824.9	Unspecified open fracture of ankle	ICD-9-CM	Diagnosis
825	Fracture of one or more tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.0	Closed fracture of calcaneus	ICD-9-CM	Diagnosis
825.1	Open fracture of calcaneus	ICD-9-CM	Diagnosis
825.2	Closed fracture of other tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.20	Closed fracture of unspecified bone(s) of foot (except toes)	ICD-9-CM	Diagnosis
825.21	Closed fracture of astragalus	ICD-9-CM	Diagnosis
825.22	Closed fracture of navicular (scaphoid) bone of foot	ICD-9-CM	Diagnosis
825.23	Closed fracture of cuboid bone	ICD-9-CM	Diagnosis
825.24	Closed fracture of cuneiform bone of foot	ICD-9-CM	Diagnosis
825.25	Closed fracture of metatarsal bone(s)	ICD-9-CM	Diagnosis
825.29	Other closed fracture of tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.3	Open fracture of other tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.30	Open fracture of unspecified bone(s) of foot (except toes)	ICD-9-CM	Diagnosis
825.31	Open fracture of astragalus	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
825.32	Open fracture of navicular (scaphoid) bone of foot	ICD-9-CM	Diagnosis
825.33	Open fracture of cuboid bone	ICD-9-CM	Diagnosis
825.34	Open fracture of cuneiform bone of foot,	ICD-9-CM	Diagnosis
825.35	Open fracture of metatarsal bone(s)	ICD-9-CM	Diagnosis
825.39	Other open fractures of tarsal and metatarsal bones	ICD-9-CM	Diagnosis
827	Other, multiple, and ill-defined fractures of lower limb	ICD-9-CM	Diagnosis
827.0	Other, multiple and ill-defined closed fractures of lower limb	ICD-9-CM	Diagnosis
827.1	Other, multiple and ill-defined open fractures of lower limb	ICD-9-CM	Diagnosis
828	Multiple fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum	ICD-9-CM	Diagnosis
828.0	Multiple closed fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum	ICD-9-CM	Diagnosis
828.1	Multiple fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum, open	ICD-9-CM	Diagnosis
V54.13	Aftercare for healing traumatic fracture of hip	ICD-9-CM	Diagnosis
V54.23	Aftercare for healing pathologic fracture of hip	ICD-9-CM	Diagnosis
Human Immunodeficiency Virus or Acquired Immunodeficiency Syndrome			
042	Human immunodeficiency virus [HIV]	ICD-9-CM	Diagnosis
043	HIV infection causing other specified conditions	ICD-9-CM	Diagnosis
043.1	HIV infection causing lymphadenopathy	ICD-9-CM	Diagnosis
043.2	HIV infection causing other disorders involving the immune mechanism	ICD-9-CM	Diagnosis
043.3	HIV infection causing other specified conditions	ICD-9-CM	Diagnosis
043.9	AIDS related complex, unspecified	ICD-9-CM	Diagnosis
044	Other HIV infection	ICD-9-CM	Diagnosis
044.0	Other HIV infection	ICD-9-CM	Diagnosis
044.9	HIV infection, unspecified	ICD-9-CM	Diagnosis
795.71	Nonspecific serologic evidence of human immunodeficiency virus (HIV)	ICD-9-CM	Diagnosis
V08	Asymptomatic human immunodeficiency virus (HIV) infection status	ICD-9-CM	Diagnosis
Hyperlipidemia or Lipid Disorder			
272.0	Pure hypercholesterolemia	ICD-9-CM	Diagnosis
272.1	Pure hyperglyceridemia	ICD-9-CM	Diagnosis
272.2	Mixed hyperlipidemia	ICD-9-CM	Diagnosis
272.4	Other and unspecified hyperlipidemia	ICD-9-CM	Diagnosis
Hypertension			
401	Essential hypertension	ICD-9-CM	Diagnosis
401.0	Essential hypertension, malignant	ICD-9-CM	Diagnosis
401.1	Essential hypertension, benign	ICD-9-CM	Diagnosis
401.9	Unspecified essential hypertension	ICD-9-CM	Diagnosis
402	Hypertensive heart disease	ICD-9-CM	Diagnosis
402.0	Malignant hypertensive heart disease	ICD-9-CM	Diagnosis
402.00	Malignant hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.1	Benign hypertensive heart disease	ICD-9-CM	Diagnosis
402.10	Benign hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.9	Unspecified hypertensive heart disease	ICD-9-CM	Diagnosis
402.90	Unspecified hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
403	Hypertensive chronic kidney disease	ICD-9-CM	Diagnosis
403.0	Hypertensive chronic kidney disease, malignant	ICD-9-CM	Diagnosis
403.00	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
403.01	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
403.1	Hypertensive chronic kidney disease, benign	ICD-9-CM	Diagnosis
403.10	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
403.11	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
403.9	Hypertensive chronic kidney disease, unspecified	ICD-9-CM	Diagnosis
403.90	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
403.91	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404	Hypertensive heart and chronic kidney disease	ICD-9-CM	Diagnosis
404.0	Hypertensive heart and chronic kidney disease, malignant	ICD-9-CM	Diagnosis
404.00	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.02	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.1	Hypertensive heart and chronic kidney disease, benign	ICD-9-CM	Diagnosis
404.10	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.12	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.9	Hypertensive heart and chronic kidney disease, unspecified	ICD-9-CM	Diagnosis
404.90	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
404.92	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	ICD-9-CM	Diagnosis
405	Secondary hypertension	ICD-9-CM	Diagnosis
405.0	Secondary hypertension, malignant	ICD-9-CM	Diagnosis
405.01	Secondary renovascular hypertension, malignant	ICD-9-CM	Diagnosis
405.09	Other secondary hypertension, malignant	ICD-9-CM	Diagnosis
405.1	Secondary hypertension, benign	ICD-9-CM	Diagnosis
405.11	Secondary renovascular hypertension, benign	ICD-9-CM	Diagnosis
405.19	Other secondary hypertension, benign	ICD-9-CM	Diagnosis
405.9	Unspecified secondary hypertension, unspecified	ICD-9-CM	Diagnosis
405.91	Secondary renovascular hypertension, unspecified	ICD-9-CM	Diagnosis
405.99	Other secondary hypertension, unspecified	ICD-9-CM	Diagnosis
	Hypoglycemia		
250.8	Diabetes with other specified manifestations	ICD-9-CM	Diagnosis
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.81	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.82	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.83	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
251.0	Hypoglycemic coma	ICD-9-CM	Diagnosis
251.1	Other specified hypoglycemia	ICD-9-CM	Diagnosis
251.2	Hypoglycemia, unspecified	ICD-9-CM	Diagnosis
	Obesity (or Weight Gain)		
278.0	Overweight and obesity	ICD-9-CM	Diagnosis
278.00	Obesity, unspecified	ICD-9-CM	Diagnosis
278.01	Morbid obesity	ICD-9-CM	Diagnosis
278.02	Overweight	ICD-9-CM	Diagnosis
278.03	Obesity hypoventilation syndrome	ICD-9-CM	Diagnosis
783.1	Abnormal weight gain	ICD-9-CM	Diagnosis
793.91	Image test inconclusive due to excess body fat	ICD-9-CM	Diagnosis
V85.3	Body Mass Index between 30-39, adult	ICD-9-CM	Diagnosis
V85.30	Body Mass Index 30.0-30.9, adult	ICD-9-CM	Diagnosis
V85.31	Body Mass Index 31.0-31.9, adult	ICD-9-CM	Diagnosis
V85.32	Body Mass Index 32.0-32.9, adult	ICD-9-CM	Diagnosis
V85.33	Body Mass Index 33.0-33.9, adult	ICD-9-CM	Diagnosis
V85.34	Body Mass Index 34.0-34.9, adult	ICD-9-CM	Diagnosis
V85.35	Body Mass Index 35.0-35.9, adult	ICD-9-CM	Diagnosis
V85.36	Body Mass Index 36.0-36.9, adult	ICD-9-CM	Diagnosis
V85.37	Body Mass Index 37.0-37.9, adult	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
V85.38	Body Mass Index 38.0-38.9, adult	ICD-9-CM	Diagnosis
V85.39	Body Mass Index 39.0-39.9, adult	ICD-9-CM	Diagnosis
V85.4	Body Mass Index 40 and over, adult	ICD-9-CM	Diagnosis
V85.41	Body Mass Index 40.0-44.9, adult	ICD-9-CM	Diagnosis
V85.42	Body Mass Index 45.0-49.9, adult	ICD-9-CM	Diagnosis
V85.43	Body Mass Index 50.0-59.9, adult	ICD-9-CM	Diagnosis
V85.44	Body Mass Index 60.0-69.9, adult	ICD-9-CM	Diagnosis
V85.45	Body Mass Index 70 and over, adult	ICD-9-CM	Diagnosis
	Osteoporosis		
733.0	Osteoporosis	ICD-9-CM	Diagnosis
733.00	Unspecified osteoporosis	ICD-9-CM	Diagnosis
733.01	Senile osteoporosis	ICD-9-CM	Diagnosis
733.02	Idiopathic osteoporosis	ICD-9-CM	Diagnosis
733.03	Disuse osteoporosis	ICD-9-CM	Diagnosis
733.09	Other osteoporosis	ICD-9-CM	Diagnosis
V17.81	Family history of, Osteoporosis	ICD-9-CM	Diagnosis
V82.81	Special screening for osteoporosis	ICD-9-CM	Diagnosis
	Peripheral Neuropathy		
250.6	Diabetes with neurological manifestations	ICD-9-CM	Diagnosis
250.60	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.61	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.62	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.63	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
337.1	Peripheral autonomic neuropathy in disorders classified elsewhere	ICD-9-CM	Diagnosis
354	Mononeuritis of upper limb and mononeuritis multiplex	ICD-9-CM	Diagnosis
354.0	Carpal tunnel syndrome	ICD-9-CM	Diagnosis
354.1	Other lesion of median nerve	ICD-9-CM	Diagnosis
354.2	Lesion of ulnar nerve	ICD-9-CM	Diagnosis
354.3	Lesion of radial nerve	ICD-9-CM	Diagnosis
354.4	Causalgia of upper limb	ICD-9-CM	Diagnosis
354.5	Mononeuritis multiplex	ICD-9-CM	Diagnosis
354.8	Other mononeuritis of upper limb	ICD-9-CM	Diagnosis
354.9	Unspecified mononeuritis of upper limb	ICD-9-CM	Diagnosis
355	Mononeuritis of lower limb and unspecified site	ICD-9-CM	Diagnosis
355.0	Lesion of sciatic nerve	ICD-9-CM	Diagnosis
355.1	Meralgia paresthetica	ICD-9-CM	Diagnosis
355.2	Other lesion of femoral nerve	ICD-9-CM	Diagnosis
355.3	Lesion of lateral popliteal nerve	ICD-9-CM	Diagnosis
355.4	Lesion of medial popliteal nerve	ICD-9-CM	Diagnosis
355.5	Tarsal tunnel syndrome	ICD-9-CM	Diagnosis
355.6	Lesion of plantar nerve	ICD-9-CM	Diagnosis

Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report

Code	Description	Code Type	Code Category
355.7	Other mononeuritis of lower limb	ICD-9-CM	Diagnosis
355.71	Causalgia of lower limb	ICD-9-CM	Diagnosis
355.79	Other mononeuritis of lower limb	ICD-9-CM	Diagnosis
355.8	Unspecified mononeuritis of lower limb	ICD-9-CM	Diagnosis
355.9	Mononeuritis of unspecified site	ICD-9-CM	Diagnosis
357.2	Polyneuropathy in diabetes	ICD-9-CM	Diagnosis
	Tobacco Use		
305.1	Nondependent tobacco use disorder	ICD-9-CM	Diagnosis
V15.82	Personal history of tobacco use, presenting hazards to health	ICD-9-CM	Diagnosis

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
Anti-Diabetic Medication
Saxagliptin
saxagliptin hcl/metformin hcl
saxagliptin hcl
Sitagliptin
sitagliptin phos/metformin hcl
sitagliptin/simvastatin
sitagliptin phosphate
Long-Acting Insulin
hum insulin nph/reg insulin hm
insulin glargine,hum.rec.anlog
insulin nph human semi-syn
insulin nph s-s/reg insuln s-s
insuln asp prt/insulin aspart
nph, human insulin isophane
insulin detemir
insulin npl/insulin lispro
ins zn,bf (p)/ins zn,pk (p)
insul,pk pure/insul nph,pk-p
insulin isophane nph,bf-pk
insulin protamine zinc,beef
insulin protamine zn,beef (p)
insulin protamine zn,bf-pk
insulin protamine zn,pork (p)
insulin zinc beef
insulin zinc ext,beef (p)
insulin zinc extend human rec
insulin zinc extended,beef
insulin zinc extended,bf-pk
insulin zinc human rec
insulin zinc human semi-syn
insulin zinc prompt,beef
insulin zinc prompt,bf-pk
insulin zinc prompt,pork pure
insulin zinc,beef purified
insulin zinc,beef-pork
insulin zinc,pork purified
Pioglitazone
alogliptin benz/pioglitzone
pioglitazone hcl
pioglitazone hcl/metformin hcl
pioglitazone hcl/glimepiride

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
Second Generation Sulfonylurea
glipizide/metformin hcl
glyburide/metformin hcl
pioglitazone hcl/glimepiride
glimepiride
glipizide
glyburide
glyburide,micronized
rosiglitazone/glimepiride
Alpha-Glucosidase Inhibitor
acarbose
miglitol
Biguanide
metformin/aa comb.#7/hc#125/ch
metformin/caff/aa7/hrb125/chol
metformin hcl
saxagliptin hcl/metformin hcl
sitagliptin phos/metformin hcl
glipizide/metformin hcl
glyburide/metformin hcl
alogliptin benz/metformin hcl
linagliptin/metformin hcl
repaglinide/metformin hcl
pioglitazone hcl/metformin hcl
rosiglitazone/metformin hcl
Other Dipeptidyl Peptidase-4 (DPP-4) Inhibitor
alogliptin benzoate
linagliptin
alogliptin benz/metformin hcl
linagliptin/metformin hcl
alogliptin benz/pioglitzone
Meglitinide
nateglinide
repaglinide
repaglinide/metformin hcl
First Generation Sulfonylurea
acetohexamide
chlorpropamide
tolazamide
tolbutamide

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
Short-Acting Insulin
insulin regular,human&rel.unt
reg insulin hm/rlse/chbr/ihlr
insulin reg human semi-syn
insulin regular, human
insulin reg, hum s-s buff
insulin regular,beef-pork
insulin regular,human buffered
insulin,beef
insulin,pork
insulin,pork purified
insulin,pork reg. concentrate
insulin aspart
insulin glulisine
insulin lispro
insulin isophane,beef
insulin isophane,beef pure
insulin isophane,pork pure
Other Thiazolidinedione
rosiglitazone maleate
troglitazone
rosiglitazone/metformin hcl
rosiglitazone/glimepiride
Other Anti-Diabetes Medication (GLP-1 Analogues, Amylin Analog-Types, Canagliflozin)
canagliflozin
exenatide
liraglutide
pramlintide acetate
exenatide microspheres
Anti-Hypertensive Agent
Angiotensin-Converting Enzyme (ACE) Inhibitor
benazepril hcl
ramipril
lisinopril/dietary sup.cmb10
enalapril maleate
captopril
fosinopril sodium
lisinopril
moexipril hcl
perindopril erbumine
quinapril hcl
trandolapril
amlodipine besylate/benazepril
enalapril maleate/felodipine
enalapril mal/diltiazem mal
trandolapril/verapamil hcl
benazepril/hydrochlorothiazide

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
captopril/hydrochlorothiazide
enalapril/hydrochlorothiazide
fosinopril/hydrochlorothiazide
lisinopril/hydrochlorothiazide
moexipril/hydrochlorothiazide
quinapril/hydrochlorothiazide
Alpha Blocker
prazosin hcl
terazosin hcl
doxazosin mesylate
prazosin hcl/polythiazide
Angiotensin Receptor Blocker (ARB)
valsartan
azilsartan medoxomil
candesartan cilexetil
eprosartan mesylate
irbesartan
losartan potassium
olmesartan medoxomil
telmisartan
amlodipine bes/olmesartan med
amlodipine/valsartan
telmisartan/amlodipine
amlodipine/valsartan/hcthiazid
olmesartan/amlodipin/hcthiazid
azilsartan med/chlorthalidone
candesartan/hydrochlorothiazid
eprosartan/hydrochlorothiazide
irbesartan/hydrochlorothiazide
losartan/hydrochlorothiazide
olmesartan/hydrochlorothiazide
telmisartan/hydrochlorothiazid
valsartan/hydrochlorothiazide
aliskiren/valsartan
Beta Blocker
acebutolol hcl
propranolol hcl
carvedilol phosphate
metoprolol/dietary suppl.cmb10
atenolol
betaxolol hcl
bisoprolol fumarate
carvedilol
labetalol hcl
metoprolol tartrate
nadolol
penbutolol sulfate

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
pindolol
timolol maleate
metoprolol succinate
propranolol/hydrochlorothiazid
atenolol/chlorthalidone
bisoprolol fumarate/hctz
metoprolol/hydrochlorothiazide
nadolol/bendroflumethiazide
timolol/hydrochlorothiazide
metoprolol succinate/hctz
Calcium (Ca) Channel Blocker
amlodipine besylate/benazepril
enalapril maleate/felodipine
enalapril mal/diltiazem mal
trandolapril/verapamil hcl
amlodipine bes/olmesartan med
amlodipine/valsartan
telmisartan/amlodipine
amlodipine/valsartan/hcthiazid
olmesartan/amlodipin/hcthiazid
isradipine
nicardipine hcl
nifedipine
diltiazem hcl
verapamil hcl
amlodipine besylate
diltiazem malate
felodipine
amlodipine/atorvastatin
aliskiren/amlodipine besylate
aliskiren/amlodipin/hcthiazide
Direct Vasodilator
tolazoline hcl
hydralazine hcl
minoxidil
hydralazine/reserpin/hcthiazid
hydralazine/hydrochlorothiazid
Loop Diuretic
furosemide
bumetanide
ethacrynic acid
torsemide
Aldosterone Receptor Agonist (ARA)
eplerenone
spironolactone
Non-ARA Potassium (K) Sparing Diuretic
triamterene

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
amiloride hcl
triamterene/hydrochlorothiazid
amiloride/hydrochlorothiazide
spironolact/hydrochlorothiazid
Thiazide Diuretic
benazepril/hydrochlorothiazide
captopril/hydrochlorothiazide
enalapril/hydrochlorothiazide
fosinopril/hydrochlorothiazide
lisinopril/hydrochlorothiazide
moexipril/hydrochlorothiazide
quinapril/hydrochlorothiazide
clonidine hcl/chlorthalidone
methyldopa/chlorothiazide
methyldopa/hydrochlorothiazide
prazosin hcl/polythiazide
amlodipine/valsartan/hcthiazid
olmesartan/amlodipin/hcthiazid
azilsartan med/chlorthalidone
candesartan/hydrochlorothiazid
eprosartan/hydrochlorothiazide
irbesartan/hydrochlorothiazide
losartan/hydrochlorothiazide
olmesartan/hydrochlorothiazide
telmisartan/hydrochlorothiazid
valsartan/hydrochlorothiazide
propranolol/hydrochlorothiazid
atenolol/chlorthalidone
bisoprolol fumarate/hctz
metoprolol/hydrochlorothiazide
nadolol/bendroflumethiazide
timolol/hydrochlorothiazide
metoprolol succinate/hctz
triamterene/hydrochlorothiazid
amiloride/hydrochlorothiazide
spironolact/hydrochlorothiazid
aliskiren/amlodipin/hcthiazide
aliskiren/hydrochlorothiazide
deserpidine/hydrochlorothiazid
deserpidine/methyclothiazide
rauwolfia serpentina/bfmtz
reserpine/chlorothiazide
reserpine/hydrochlorothiazide
reserpine/hydroflumethiazide
reserpine/methyclothiazide
reserpine/polythiazide
hydrochlorothiazide

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
chlorothiazide
bendroflumethiazide
chlorthalidone
guanethid/hydrochlorothiazide
hydroflumethiazide
indapamide
methyclothiazide
metolazone
polythiazide
trichlormethiazide
hydralazine/reserpin/hcthiazid
hydralazine/hydrochlorothiazid
Central Alpha-2 Receptor Agonist
clonidine hcl
methyldopa
clonidine hcl/chlorthalidone
methyldopa/chlorothiazide
methyldopa/hydrochlorothiazide
Reserpine and Derivative
rauwolfia serpentina
reserpine
deserpidine/hydrochlorothiazid
deserpidine/methyclothiazide
rauwolfia serpentina/bfmtz
reserpine/chlorothiazide
reserpine/hydrochlorothiazide
reserpine/hydroflumethiazide
reserpine/methyclothiazide
reserpine/polythiazide
hydralazine/reserpin/hcthiazid
Lipid-Lowering Agent
amlodipine/atorvastatin
clofibrate
fenofibrate
fenofibrate,micronized
fluvastatin sodium
icosapent ethyl
lomitapide mesylate
niacin
fenofibric acid (choline)
colestipol hcl
cholestyramine (with sugar)
cholestyramine/aspartame
colesevelam hcl
aspirin(calc&mg)/pravastatin
atorvastatin calcium
cerivastatin sodium

Appendix G. List of Generic Names of Medical Products Used to Define Covariates in this Report

Generic Name
dextrothyroxine sodium
ezetimibe
fenofibrate nanocrystallized
fenofibric acid
gemfibrozil
lovastatin
pitavastatin calcium
pravastatin sodium
rosuvastatin calcium
simvastatin
ezetimibe/atorvastatin calcium
ezetimibe/simvastatin
niacin/lovastatin
niacin/simvastatin
sitagliptin/simvastatin

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage

Pre-exposure enrollment (days): 12 months (365 days)

Enrollment Gap: 45 days

Sex: Female or Male only

Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years

18-64, 65+ years (PS matching only)

Patient-level Return: No

Envelope Macro Use: No

Freeze Data: Yes

		Comparison 1		Comparison 2	
		Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
Drug/Exposure Definition	**Monitoring Period Start**	8/1/2009		8/1/2009	
	Monitoring Period End	DP-specific		DP-specific	
	Exposure	Saxagliptin	Sitagliptin	Saxagliptin	Pioglitazone
	Incidence with Respect to	Saxagliptin, sitagliptin	Saxagliptin, sitagliptin	Saxagliptin, pioglitazone	Saxagliptin, pioglitazone
	Washout (days)	365	365	365	365
	Exposure Episode Truncation Criteria	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of saxagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of Pioglitazone	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of Saxagliptin
	Cohort Definition	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
	Exposure Episode Gap	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
	Exposure Extension Period	12 days	12 days	12 days	12 days
	Minimum Episode Duration	1 day	1 day	1 day	1 day
	Minimum Days Supplied	1 day	1 day	1 day	1 day
Outcome Definition	**Event/Outcome**	AMI	AMI	AMI	AMI
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP	IPP	IPP
	Event Incidence with Respect to	AMI	AMI	AMI	AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP	IPP	IPP
	Event Washout (days)	60	60	60	60
	Blackout Period	0 days	0 days	0 days	0 days

Inclusion/ Exclusion Criteria	**Conditions**	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	Include or Exclude	Inclusion	Inclusion	Inclusion	Inclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**			Congestive heart failure	Congestive heart failure
	Include or Exclude			Exclusion	Exclusion
	Care Setting/Diagnosis Position			Any	Any
	Lookback Period			(-365, -1)	(-365, -1)
	Number of Code Occurrences			1 instance	1 instance
Stockpiling Algorithm	**Same Day Dispensing (Days Supplied)**	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	IP, IS, AV, OA, ED
Drug Utilization Evaluation Window	(-365, -1)	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis	Propensity score analysis
Perform HDPS Analysis	No	No
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.01	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population	Total population

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage

Pre-exposure enrollment (days): 12 months (365 days)

Enrollment Gap: 45 days

Sex: Female or Male only

Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years

18-64, 65+ years (PS matching only)

Patient-level Return: No

Envelope Macro Use: No

Freeze Data: Yes

		Comparison 3		Comparison 4	
		Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
Drug/Exposure Definition	**Monitoring Period Start**	8/1/2009		8/1/2009	
	Monitoring Period End	DP-specific		DP-specific	
	Exposure	Saxagliptin	Long-acting insulins	Saxagliptin	Second-generation sulfonylureas
	Incidence with Respect to	Saxagliptin, long-acting insulins	Saxagliptin, long-acting insulins	Saxagliptin, second-generation sulfonylureas	Saxagliptin, second-generation sulfonylureas
	Washout (days)	365 days	365 days	365 days	365 days
	Exposure Episode Truncation Criteria	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of long-acting insulins	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of saxagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of second-generation	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of saxagliptin
	Cohort Definition	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
	Exposure Episode Gap	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
	Exposure Extension Period	12 days	12 days	12 days	12 days
	Minimum Episode Duration	1 day	1 day	1 day	1 day
	Minimum Days Supplied	1 day	1 day	1 day	1 day
Outcome Definition	**Event/Outcome**	AMI	AMI	AMI	AMI
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP	IPP	IPP
	Event Incidence with Respect to	AMI	AMI	AMI	AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP	IPP	IPP
	Event Washout (days)	60 days	60 days	60 days	60 days
	Blackout Period	0 days	0 days	0 days	0 days

Inclusion/ Exclusion Criteria	**Conditions**	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	Include or Exclude	Inclusion	Inclusion	Inclusion	Inclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)		
	Include or Exclude	Exclusion	Exclusion		
	Care Setting/Diagnosis Position	Any	Any		
	Lookback Period	(-365, -1)	(-365, -1)		
	Number of Code Occurrences	1 instance	1 instance		
Stockpiling Algorithm	**Same Day Dispensing (Days Supplied)**	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	IP, IS, AV, OA, ED
Drug Utilization Evaluation Window	(-365, -1)	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis	Propensity score analysis
Perform HDPS Analysis	No	No
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.01	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population	Total population

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage

Pre-exposure enrollment (days): 12 months (365 days)

Enrollment Gap: 45 days

Sex: Female or Male only

Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years

18-64, 65+ years (PS matching only)

Patient-level Return: No

Envelope Macro Use: No

Freeze Data: Yes

		Comparison 5		Comparison 6	
		Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
	Monitoring Period Start	10/1/2006		10/1/2006	
	Monitoring Period End	DP-specific		DP-specific	
Drug/Exposure Definition	**Exposure**	Sitagliptin	Pioglitazone	Sitagliptin	Long-acting insulins
Drug/Exposure Definition	**Incidence with Respect to**	Sitagliptin, pioglitazone	Sitagliptin, pioglitazone	Sitagliptin, long-acting insulins	Sitagliptin, long-acting insulins
Drug/Exposure Definition	**Washout (days)**	365 days	365 days	365 days	365 days
Drug/Exposure Definition	**Exposure Episode Truncation Criteria**	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of pioglitazone	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of long-acting insulins	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin
Drug/Exposure Definition	**Cohort Definition**	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
Drug/Exposure Definition	**Exposure Episode Gap**	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
Drug/Exposure Definition	**Exposure Extension Period**	12 days	12 days	12 days	12 days
Drug/Exposure Definition	**Minimum Episode Duration**	1 day	1 day	1 day	1 day
Drug/Exposure Definition	**Minimum Days Supplied**	1 day	1 day	1 day	1 day
Outcome Definition	**Event/Outcome**	AMI	AMI	AMI	AMI
Outcome Definition	**Care Setting/Diagnosis Position**	Inpatient Primary (IPP)	IPP	IPP	IPP
Outcome Definition	**Event Incidence with Respect to**	AMI	AMI	AMI	AMI
Outcome Definition	**Event Incidence Criteria Care Setting / Diagnosis Position**	IPP	IPP	IPP	IPP
Outcome Definition	**Event Washout (days)**	60 days	60 days	60 days	60 days
Outcome Definition	**Blackout Period**	0 days	0 days	0 days	0 days

Inclusion/ Exclusion Criteria	**Conditions**	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	Include or Exclude	Inclusion	Inclusion	Inclusion	Inclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Congestive heart failure	Congestive heart failure	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Stockpiling Algorithm	**Same Day Dispensing (Days Supplied)**	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	IP, IS, AV, OA, ED
Drug Utilization Evaluation Window	(-365, -1)	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis	Propensity score analysis
Perform HDPS Analysis	No	No
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.01	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population	Total population

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage

Pre-exposure enrollment (days): 12 months (365 days)

Enrollment Gap: 45 days

Sex: Female or Male only

Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years

18-64, 65+ years (PS matching only)

Patient-level Return: No

Envelope Macro Use: No

Freeze Data: Yes

		Comparison 7	
		Exposure of Interest Group	**Reference Group**
	Monitoring Period Start	10/1/2006	
	Monitoring Period End	DP-specific	
Drug/Exposure Definition	**Exposure**	Sitagliptin	Second-generation sulfonylureas
	Incidence with Respect to	Sitagliptin, second-generation sulfonylureas	Sitagliptin, second-generation sulfonylureas
	Washout (days)	365	365
	Exposure Episode Truncation Criteria	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of second-generation sulfonylureas	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin
	Cohort Definition	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
	Exposure Episode Gap	33% previous days' supply	33% previous days' supply
	Exposure Extension Period	12 days	12 days
	Minimum Episode Duration	1 day	1 day
	Minimum Days Supplied	1 day	1 day
Outcome Definition	**Event/Outcome**	AMI	AMI
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP
	Event Incidence with Respect to	AMI	AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP
	Event Washout (days)	60	60
	Blackout Period	0 days	0 days

Inclusion/ Exclusion Criteria

Conditions	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
Include or Exclude	Inclusion	Inclusion
Care Setting/Diagnosis Position	Any	Any
Lookback Period	(-365, -1)	(-365, -1)
Number of Code Occurrences	1 instance	1 instance

Inclusion/ Exclusion Criteria

Conditions	Gestational diabetes	Gestational diabetes
Include or Exclude	Exclusion	Exclusion
Care Setting/Diagnosis Position	Any	Any
Lookback Period	(-365, 0)	(-365, 0)
Number of Code Occurrences	1 instance	1 instance

Inclusion/ Exclusion Criteria

Conditions		
Include or Exclude		
Care Setting/Diagnosis Position		
Lookback Period		
Number of Code Occurrences		

Stockpiling Algorithm

Same Day Dispensing (Days Supplied)	Sum	Sum
Same Day Dispensing (Amount Supplied)	Sum	Sum
Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)
Range of Allowable Amount Supplied	N/A	N/A
Overlap Percentage Processing	Default	Default

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)
Drug Utilization Evaluation Window	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis
Perform HDPS Analysis	No
Matching Ratio	1:1
Matching Caliper Settings	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation o acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage

Pre-exposure enrollment (days): 12 months (365 days)

Enrollment Gap: 45 days

Sex: Female or Male only

Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years

18-64, 65+ years (PS matching only)

Patient-level Return: No

Envelope Macro Use: No

Freeze Data: Yes

		Comparison 8		Comparison 9	
		Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
Drug/Exposure Definition	**Monitoring Period Start**	8/1/2009		8/1/2009	
	Monitoring Period End	DP-specific		DP-specific	
	Exposure	Saxagliptin	Sitagliptin	Saxagliptin	Pioglitazone
	Incidence with Respect to	Saxagliptin, sitagliptin	Saxagliptin, sitagliptin	Saxagliptin, pioglitazone	Saxagliptin, pioglitazone
	Washout (days)	365 days	365 days	365 days	365 days
	Exposure Episode Truncation Criteria	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of saxagliptin	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of Pioglitazone	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of Saxagliptin
	Cohort Definition	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
	Exposure Episode Gap	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
	Exposure Extension Period	12 days	12 days	12 days	12 days
	Minimum Episode Duration	1 day	1 day	1 day	1 day
	Minimum Days Supplied	1 day	1 day	1 day	1 day
Outcome Definition	**Event/Outcome**	hHF	hHF	hHF	hHF
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP	IPP	IPP
	Event Incidence with Respect to	hHF or AMI	hHF or AMI	hHF or AMI	hHF or AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP	IPP	IPP
	Event Washout (days)	60 days	60 days	60 days	60 days
	Blackout Period	0 days	0 days	0 days	0 days

Inclusion/ Exclusion Criteria

Conditions	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
Include or Exclude	Inclusion	Inclusion	Inclusion	Inclusion
Care Setting/Diagnosis Position	Any	Any	Any	Any
Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance

Inclusion/ Exclusion Criteria

Conditions	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
Care Setting/Diagnosis Position	Any	Any	Any	Any
Lookback Period	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance

Inclusion/ Exclusion Criteria

Conditions			Congestive heart failure	Congestive heart failure
Include or Exclude			Exclusion	Exclusion
Care Setting/Diagnosis Position			Any	Any
Lookback Period			(-365, -1)	(-365, -1)
Number of Code Occurrences			1 instance	1 instance

Stockpiling Algorithm

Same Day Dispensing (Days Supplied)	Sum	Sum	Sum	Sum
Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
Overlap Percentage Processing	Default	Default	Default	Default

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	IP, IS, AV, OA, ED
Drug Utilization Evaluation Window	(-365, -1)	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis	Propensity score analysis
Perform HDPS Analysis	No	No
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.01	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population	Total population

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage

Pre-exposure enrollment (days): 12 months (365 days)

Enrollment Gap: 45 days

Sex: Female or Male only

Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years

18-64, 65+ years (PS matching only)

Patient-level Return: No

Envelope Macro Use: No

Freeze Data: Yes

		Comparison 10		Comparison 11	
		Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
Drug/Exposure Definition	**Monitoring Period Start**	8/1/2009		8/1/2009	
	Monitoring Period End	DP-specific		DP-specific	
	Exposure	Saxagliptin	Long-acting insulins	Saxagliptin	Second-generation sulfonylureas
	Incidence with Respect to	Saxagliptin, long-acting insulins	Saxagliptin, long-acting insulins	Saxagliptin, second-generation sulfonylureas	Saxagliptin, second-generation sulfonylureas
	Washout (days)	365 days	365 days	365 days	365 days
	Exposure Episode Truncation Criteria	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of long-acting insulins	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of saxagliptin	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of second-generation sulfonylureas	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of saxagliptin
	Cohort Definition	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
	Exposure Episode Gap	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
	Exposure Extension Period	12 days	12 days	12 days	12 days
	Minimum Episode Duration	1 day	1 day	1 day	1 day
	Minimum Days Supplied	1 day	1 day	1 day	1 day
Outcome Definition	**Event/Outcome**	hHF	hHF	hHF	hHF
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP	IPP	IPP
	Event Incidence with Respect to	hHF or AMI	hHF or AMI	hHF or AMI	hHF or AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP	IPP	IPP
	Event Washout (days)	60 days	60 days	60 days	60 days
	Blackout Period	0 days	0 days	0 days	0 days

Inclusion/ Exclusion Criteria	**Conditions**	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	Include or Exclude	Inclusion	Inclusion	Inclusion	Inclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)		
	Include or Exclude	Exclusion	Exclusion		
	Care Setting/Diagnosis Position	Any	Any		
	Lookback Period	(-365, -1)	(-365, -1)		
	Number of Code Occurrences	1 instance	1 instance		
Stockpiling Algorithm	**Same Day Dispensing (Days Supplied)**	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	IP, IS, AV, OA, ED
Drug Utilization Evaluation Window	(-365, -1)	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis	Propensity score analysis
Perform HDPS Analysis	No	No
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.01	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population	Total population

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage

Pre-exposure enrollment (days): 12 months (365 days)

Enrollment Gap: 45 days

Sex: Female or Male only

Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years

18-64, 65+ years (PS matching only)

Patient-level Return: No

Envelope Macro Use: No

Freeze Data: Yes

		Comparison 12		Comparison 13	
		Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
Drug/Exposure Definition	**Monitoring Period Start**	10/1/2006		10/1/2006	
	Monitoring Period End	DP-specific		DP-specific	
	Exposure	Sitagliptin	Pioglitazone	Sitagliptin	Long-acting insulins
	Incidence with Respect to	Sitagliptin, pioglitazone	Sitagliptin, pioglitazone	Sitagliptin, long-acting insulins	Sitagliptin, long-acting insulins
	Washout (days)	365 days	365 days	365 days	365 days
	Exposure Episode Truncation Criteria	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of pioglitazone	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of long-acting insulins	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of sitagliptin
	Cohort Definition	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
	Exposure Episode Gap	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
	Exposure Extension Period	12 days	12 days	12 days	12 days
	Minimum Episode Duration	1 day	1 day	1 day	1 day
	Minimum Days Supplied	1 day	1 day	1 day	1 day
Outcome Definition	**Event/Outcome**	hHF	hHF	hHF	hHF
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP	IPP	IPP
	Event Incidence with Respect to	hHF or AMI	hHF or AMI	hHF or AMI	hHF or AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP	IPP	IPP
	Event Washout (days)	60 days	60 days	60 days	60 days
	Blackout Period	0 days	0 days	0 days	0 days

Inclusion/ Exclusion Criteria	**Conditions**	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	Include or Exclude	Inclusion	Inclusion	Inclusion	Inclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	**Conditions**	Congestive heart failure	Congestive heart failure	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Stockpiling Algorithm	**Same Day Dispensing (Days Supplied)**	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	IP, IS, AV, OA, ED
Drug Utilization Evaluation Window	(-365, -1)	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis	Propensity score analysis
Perform HDPS Analysis	No	No
Matching Ratio	1:1	1:1
Matching Caliper Settings	0.01	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population	Total population

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

Query Period: See specifications for monitoring periods for each comparison

Listed below are Data Partner-specific (DP) end dates for certain monitoring periods when specified below.

DP:	AMI DP-Specific End Date (based on ETL DP Max Date):	hHF DP-Specific End Date (based on ETL DP Max Date):
01	3/31/2014	N/A
02	5/31/2014	1/31/2014
03	12/31/2012	12/31/2012
05	4/30/2014	12/31/2013
06	6/30/2014	3/31/2014
07	1/31/2014	10/31/2013
08	12/31/2012	12/31/2012
10	7/31/2014	N/A
13	6/30/2014	8/30/2013
14	7/31/2014	N/A
15	12/31/2013	9/30/2013
16	6/30/2012	6/30/2012
17	6/30/2012	6/30/2012

Coverage Requirement: Medical and Drug Coverage
Pre-exposure enrollment (days): 12 months (365 days)
Enrollment Gap: 45 days
Sex: Female or Male only
Age Groups: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years
18-64, 65+ years (PS matching only)
Patient-level Return: No
Envelope Macro Use: No
Freeze Data: Yes

		Comparison 14	
		Exposure of Interest Group	**Reference Group**
	Monitoring Period Start	10/1/2006	
	Monitoring Period End	DP-specific	
Drug/Exposure Definition	**Exposure**	Sitagliptin	Second-generation sulfonylureas
	Incidence with Respect to	Sitagliptin, second-generation sulfonylureas	Sitagliptin, second-generation sulfonylureas
	Washout (days)	365	365
	Exposure Episode Truncation Criteria	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of second-generation sulfonylureas	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of sitagliptin
	Cohort Definition	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
	Exposure Episode Gap	33% previous days' supply	33% previous days' supply
	Exposure Extension Period	12 days	12 days
	Minimum Episode Duration	1 day	1 day
	Minimum Days Supplied	1 day	1 day
Outcome Definition	**Event/Outcome**	hHF	hHF
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP
	Event Incidence with Respect to	hHF or AMI	hHF or AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP
	Event Washout (days)	60	60
	Blackout Period	0 days	0 days

Inclusion/ Exclusion Criteria

Conditions	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
Include or Exclude	Inclusion	Inclusion
Care Setting/Diagnosis Position	Any	Any
Lookback Period	(-365, -1)	(-365, -1)
Number of Code Occurrences	1 instance	1 instance

Inclusion/ Exclusion Criteria

Conditions	Gestational diabetes	Gestational diabetes
Include or Exclude	Exclusion	Exclusion
Care Setting/Diagnosis Position	Any	Any
Lookback Period	(-365, 0)	(-365, 0)
Number of Code Occurrences	1 instance	1 instance

Inclusion/ Exclusion Criteria

Conditions		
Include or Exclude		
Care Setting/Diagnosis Position		
Lookback Period		
Number of Code Occurrences		

Stockpiling Algorithm

Same Day Dispensing (Days Supplied)	Sum	Sum
Same Day Dispensing (Amount Supplied)	Sum	Sum
Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)
Range of Allowable Amount Supplied	N/A	N/A
Overlap Percentage Processing	Default	Default

Appendix H.8. Specifications for Parameters in this Request, Comparison 14; Sitagliptin vs Second-generation sulfonylureas

Baseline Covariates/Utilization/Comorbidity Score

Covariates	(See Covariates table)
Care Setting/Diagnosis Position	inpatient (IP*), outpatient (ambulatory visit (AV*) only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)
Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated
Comorbidity Score Evaluation window (days)	(-365, -1)
Medical Utilization Evaluation Window	(-365, -1)
Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency deaprtment (ED)
Drug Utilization Evaluation Window	(-365, -1)

Propensity Score Analysis/Subgroup Analysis

Analysis type	Propensity score analysis
Perform HDPS Analysis	No
Matching Ratio	1:1
Matching Caliper Settings	0.01
Subgroup Analyses	Prior cardiovascular disease (Yes, No) Age groups (00-64, 65+ years) Sex (Male, Female)
Population used for rematching within subgroups	Total population

Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Prior Cardiovascular Disease	Prior acute myocardial infarction (AMI) (broad)	Diagnosis (Dx), Procedure (Px)	Inpatient (IP*), Ambulatory visit (AV*)	Categorical	(-365, -61)	No PS model
Prior Cardiovascular Disease	Prior acute myocardial infarction (AMI) (narrow)	Dx, Px	Inpatient primary (IPP)	Categorical	(-365, -61)	PS model
Prior Cardiovascular Disease	All prior acute myocardial infarction (AMI) (broad)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Prior hospitalized heart failure (hHF)	Dx, Px	IPP	Categorical	(-365, -61)	hHF outcome only
Prior Cardiovascular Disease	Other ischemic heart disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Heart failure	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Other heart disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Stroke (broad)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Stroke (narrow)	Dx, Px	IPP	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Peripheral arterial disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	All coronary revascularization procedures (see below)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Coronary artery bypass graft	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Percutaneous coronary intervention	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	All carotid revascularization procedures (see below)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Carotid endarterectomy, stenting, angioplasty, or atherectomy	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Carotid bypass	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	All lower extremity revascularization (see below)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Lower extremity endarterectomy, stenting, angioplasty, or atherectomy	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Lower extremity bypass	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Lower extremity amputation	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	All prior cardiovascular disease covariates	Dx, Px	IP*, AV*	Categorical	(-365, -1)	Subgroup definition
Comorbidities	Asthma	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Cancer (excluding non-melanoma skin cancer)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Chronic kidney disease (excluding ESRD)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Chronic obstructive pulmonary disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Dementia	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Depression	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	End stage renal disease (ESRD)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model

Sentinel

Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Comorbidities	Fracture	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	HIV/AIDS	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Hyperlipidemia or lipid disorder	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Hypertension	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Hypoglycemia	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Obesity (or weight gain)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Osteoporosis	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Peripheral neuropathy	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Tobacco use	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	All comorbidity covariates	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Anti-Diabetics	Alpha-glucosidase inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Biguanides	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Other dipeptidyl peptidase 4 (DPP-4) inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Meglitinides	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Saxagliptin*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Sitagliptin*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Pioglitazone*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	First-generation sulfonylureas	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Second-generation sulfonylureas*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Long-acting insulins*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Short-acting insulins	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Other thiazolidinediones	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Other anti-diabetics (Canagliflozin, GLP-1 analogues, amylin analog-type)	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	All anti-diabetics	Rx	N/A	Categorical	(-365, -1)	No PS model
Anti-Hypertensive Agents	Angiotensin-converting enzyme (ACE) inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Alpha blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Angiotensin receptor blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Beta blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Calcium channel blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Direct vasodilators	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Loop diuretics	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Aldosterone receptor agonists (ARAs)	Rx	N/A	Categorical	(-365, -1)	PS model

Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Anti-Hypertensive Agents	Non-ARA potassium sparing diuretics	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Thiazide diuretics	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Renin inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Central alpha-2 receptor agonists (clonidine, all combinations)	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Reserpine and derivatives	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	All anti-hypertensive agents	Rx	N/A	Categorical	(-365, -1)	No PS model
Lipid-Lowering Agents	Lipid-lowering agents	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics Concurrent	Alpha-glucosidase inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Biguanides	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Other DPP-4 inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Meglitinides	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Saxagliptin*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Sitagliptin*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Pioglitazone*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	First-generation sulfonylureas	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Second-generation sulfonylureas*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Long-acting insulins*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Short-acting insulins	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Other thiazolidinediones	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Other anti-diabetics (Canagliflozin, GLP-1 analogues, amylin analog-type)	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetes Concurrent	All anti-diabetics	Rx	N/A	Categorical	(0, 0)	No PS model
Anti-Hypertensive Agents Concurrent	Angiotensin-converting enzyme inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Alpha blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Angiotensin receptor blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Beta blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Calcium channel blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Direct vasodilators	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Loop diuretics	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Aldosterone receptor agonists (ARAs)	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Non-ARA potassium sparing diuretics	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Thiazide diuretics	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Renin inhibitors	Rx	N/A	Categorical	(0, 0)	PS model

Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Anti-Hypertensive Agents Concurrent	Central alpha-2 receptor agonists (clonidine, all combinations)	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Reserpine and derivatives	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	All anti-hypertensive agents	Rx	N/A	Categorical	(0, 0)	No PS model
Lipid-Lowering Agents Concurrent	Lipid-lowering agents	Rx	N/A	Categorical	(0, 0)	PS model
Demographics	Age	N/A	N/A	Continuous	N/A	PS model
Demographics	Sex	N/A	N/A	Categorical	N/A	PS model
Demographics	Calendar year	N/A	N/A	Categorical	N/A	PS model
Utilization	Non-acute institutional stay (IS visit) during prior year	N/A	N/A	Categorical	(-365, -1)	PS model
Utilization	Any hospitalization (IP visit) within prior 30 days	N/A	N/A	Categorical	(-30, -1)	PS model
Utilization	Any hospitalization (IP visit) 31-365 days	N/A	N/A	Categorical	(-365, -31)	PS model
Utilization	Any ED visit within prior 30 days	N/A	N/A	Categorical	(-30, -1)	PS model
Utilization	Any ED visit 31-365 days before	N/A	N/A	Categorical	(-365, -31)	PS model
Utilization	Number of outpatient (AV) visits in prior year	N/A	N/A	Continuous	(-365, -1)	PS model
Utilization	Number of unique medications dispensed in prior year	N/A	N/A	Continuous	(-365, -1)	PS model

All covariates listed will appear in Table 1 output
The notes below applies to both baseline and concurrent covariates.

Red indicates these covariates were grouped into aggregate "other" group for respective group for propensity score (PS) model.
- Other anti-diabetics (Replication): Alpha glucosidase inhibitors, DPP-4, meglitinides, first-generation sulfonylureas, saxagliptin, other anti-diabetics (Canagliflozin, GLP-1 analogues, amylin analog-type). Note that saxagliptin is not included in this aggregate covariate for analyses where saxagliptin is the exposure of interest.
- Other anti-hypertensives: Central alpha-2 receptor agonists, alpha blockers, aldosterone receptor antagonists, potassium sparing diuretics, loop diuretics, direct vasodilators, renin inhibitors, reserpine and derivatives

Final anti-diabetic covariates to be used in "Replication" PS model : Biguanides, short-acting insulins, thiazolidinediones, exposure anti-diabetics*, other anti-diabetics (as defined in the row above)
Final anti-hypertensive covariates to be used in both PS model: ACE-inhibitors, angiotensin receptor blockers, beta blockers, calcium channel blockers, thiazide diuretics, other anti-hypertensives (as defined in the row above)

*Treatment drugs are only included in PS model if **not** part of treatment-comparator pair. For example, saxagliptin-insulin would have sitagliptin, pioglitazone, and sulfonylureas, but not long-acting insulins, within PS model.