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

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

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

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Overview

Date Run: April 19, 2017

Request Description: The purpose of this report was to compare the frequency of diagnoses for head injuries using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) versus International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis codes. ICD-10-CM code definitions were determined by mapping from ICD-9-CM code definitions using the Centers for Medicare and Medicaid Services (CMS) General Equivalence Mappings (GEMs). Simple forward mapping (SFM) and forward-backward mapping (FBM) were used to map ICD-9-CM to ICD-10-CM codes.¹

Sentinel Modular Program Tool Used: Cohort Identification and Descriptive Analysis (CIDA) tool, version 3.3.6

Data Source: This request was run against data from 11 Data Partners contributing to the Sentinel Distributed Database (SDD). Data from October 1, 2010 to June 30, 2016 were included in this report. The report includes three separate time periods: 1) October 1, 2010 to June 30, 2016; 2) January 1, 2015 to March 31, 2015; and 3) January 1, 2016 to March 31, 2016. This request was distributed to Data Partners on April 19, 2017. See Appendix A for a list of dates of available data for each Data Partner.

Study Design: We examined the incidence of head injuries across the ICD-9-CM era (October 2010 - September 2015) and ICD-10-CM era (October 2015 - June 2016), and additionally from January 2015 to March 2015, and from January 2016 to March 2016 in the United States. See Appendix B for specific codes used to define head injuries in this request.

Cohort Eligibility Criteria: Members included in the cohort were required to be continuously enrolled in health plans with medical and drug coverage for at least six months (183 days) before their diagnosis date, during which gaps in coverage of up to 45 days were allowed. Incident head injuries were defined as no previous head injury diagnosis in the 183 days preceding the index date with respect to ICD-9-CM and ICD-10-CM codes. The following age groups were included in the cohort: 2-17, 18-44, 45-64, and 65+ years.

Please see Appendix C for detailed specifications of parameters used in the analyses for this request.

Limitations: Algorithms used to define outcomes are imperfect; thus, it is possible that there may be misclassification. Therefore, data should be interpreted with this limitation in mind.

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

¹Fung, K. W., et al. (2016). "Preparing for the ICD-10-CM Transition: Automated Methods for Translating ICD Codes in Clinical Phenotype Definitions." EGEMS (Wash DC) 4(1): 1211.

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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, 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.

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 MP algorithm: 0: Counts all occurrences of an 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 days 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.

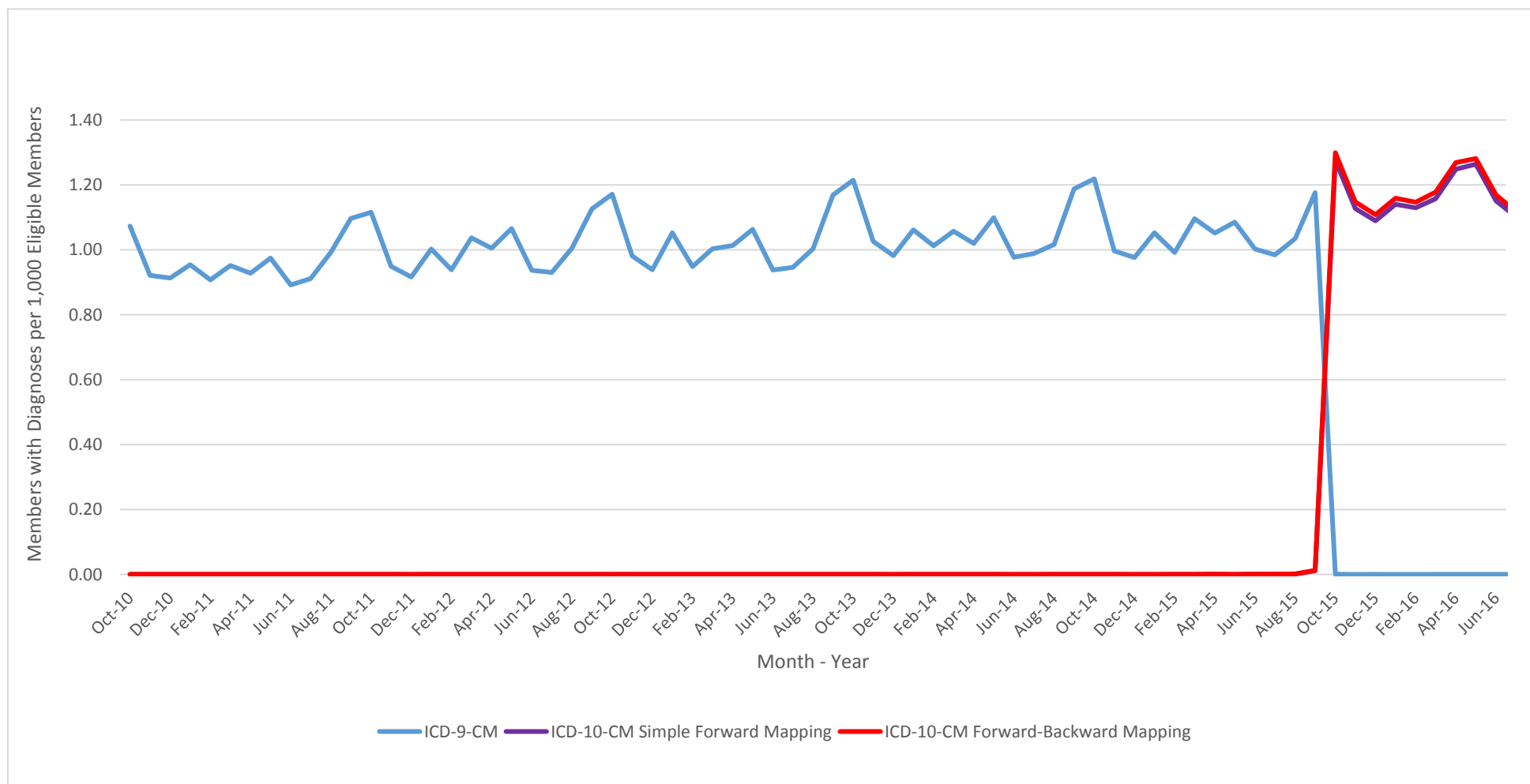
*all terms may not be used in this report

Table 1. Comparison of Incident* Head Injury Diagnoses in the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Eras (January 1, 2015 - March 31, 2015 and January 1, 2016 - March 31, 2016)

	Members with Diagnosis	Eligible Members	Members with Diagnosis per 1,000 Eligible Members
Head Injury			
ICD-9-CM: January 1, 2015 - March 31, 2015	109,942	31,216,334	3.52
ICD-10-CM: Simple Forward Mapping: January 1, 2016 - March 31, 2016	108,467	31,967,570	3.39
ICD-10-CM: Forward-Backward Mapping: January 1, 2016 - March 31, 2016	110,661	31,966,521	3.46

*Incidence defined by a 90 day washout

Figure 1. Incidence of Head Injury Diagnoses per 1,000 Eligible Members from October 2010 - June 2016 by Code Type, 183-Day Washout



Appendix A. Dates of Available Data for Each Data Partner as of Request Distribution Date (April 19, 2017)

DP ID	Start Date¹	End Date¹
DP001	10/1/2010	11/30/2016
DP002	10/1/2010	7/31/2016
DP003	10/1/2010	9/30/2016
DP004	10/1/2010	6/30/2016
DP005	10/1/2010	7/31/2016
DP006	10/1/2010	11/30/2016
DP007	10/1/2010	7/31/2016
DP008	10/1/2010	10/31/2016
DP009	10/1/2010	11/30/2016
DP010	10/1/2010	12/31/2016
DP011	10/1/2010	3/31/2016

¹The 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 International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
ICD-9-CM		
850	Concussion	ICD-9-CM
850.0	Concussion with no loss of consciousness	ICD-9-CM
850.1	Concussion with brief (less than one hour) loss of consciousness	ICD-9-CM
850.11	Concussion, with loss of consciousness of 30 minutes or less	ICD-9-CM
850.12	Concussion, with loss of consciousness 31 to 59 minutes	ICD-9-CM
850.2	Concussion with moderate (1-24 hours) loss of consciousness	ICD-9-CM
850.3	Concussion with prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
850.4	Concussion with prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
850.5	Concussion with loss of consciousness of unspecified duration	ICD-9-CM
850.9	Unspecified concussion	ICD-9-CM
851	Cerebral laceration and contusion	ICD-9-CM
851.0	Cortex (cerebral) contusion without mention of open intracranial wound	ICD-9-CM
851.00	Cortex (cerebral) contusion without mention of open intracranial wound, state of consciousness unspecified	ICD-9-CM
851.01	Cortex (cerebral) contusion without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
851.02	Cortex (cerebral) contusion without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.03	Cortex (cerebral) contusion without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.04	Cortex (cerebral) contusion without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.05	Cortex (cerebral) contusion without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.06	Cortex (cerebral) contusion without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.09	Cortex (cerebral) contusion without mention of open intracranial wound, unspecified concussion	ICD-9-CM
851.1	Cortex (cerebral) contusion with open intracranial wound	ICD-9-CM
851.10	Cortex (cerebral) contusion with open intracranial wound, unspecified state of consciousness	ICD-9-CM
851.11	Cortex (cerebral) contusion with open intracranial wound, no loss of consciousness	ICD-9-CM
851.12	Cortex (cerebral) contusion with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.13	Cortex (cerebral) contusion with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.14	Cortex (cerebral) contusion with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.15	Cortex (cerebral) contusion with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM

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Code	Description	Code Type
851.16	Cortex (cerebral) contusion with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.19	Cortex (cerebral) contusion with open intracranial wound, unspecified concussion	ICD-9-CM
851.2	Cortex (cerebral) laceration without mention of open intracranial wound	ICD-9-CM
851.20	Cortex (cerebral) laceration without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
851.21	Cortex (cerebral) laceration without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
851.22	Cortex (cerebral) laceration without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.23	Cortex (cerebral) laceration without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.24	Cortex (cerebral) laceration without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.25	Cortex (cerebral) laceration without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.26	Cortex (cerebral) laceration without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.29	Cortex (cerebral) laceration without mention of open intracranial wound, unspecified concussion	ICD-9-CM
851.3	Cortex (cerebral) laceration with open intracranial wound	ICD-9-CM
851.30	Cortex (cerebral) laceration with open intracranial wound, unspecified state of consciousness	ICD-9-CM
851.31	Cortex (cerebral) laceration with open intracranial wound, no loss of consciousness	ICD-9-CM
851.32	Cortex (cerebral) laceration with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.33	Cortex (cerebral) laceration with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.34	Cortex (cerebral) laceration with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.35	Cortex (cerebral) laceration with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.36	Cortex (cerebral) laceration with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.39	Cortex (cerebral) laceration with open intracranial wound, unspecified concussion	ICD-9-CM
851.4	Cerebellar or brain stem contusion without mention of open intracranial wound	ICD-9-CM
851.40	Cerebellar or brain stem contusion without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
851.41	Cerebellar or brain stem contusion without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
851.42	Cerebellar or brain stem contusion without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM

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Code	Description	Code Type
851.43	Cerebellar or brain stem contusion without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.44	Cerebellar or brain stem contusion without mention of open intracranial wound, prolonged (more than 24 hours) loss consciousness and return to pre-existing conscious level	ICD-9-CM
851.45	Cerebellar or brain stem contusion without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.46	Cerebellar or brain stem contusion without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.49	Cerebellar or brain stem contusion without mention of open intracranial wound, unspecified concussion	ICD-9-CM
851.5	Cerebellar or brain stem contusion with open intracranial wound	ICD-9-CM
851.50	Cerebellar or brain stem contusion with open intracranial wound, unspecified state of consciousness	ICD-9-CM
851.51	Cerebellar or brain stem contusion with open intracranial wound, no loss of consciousness	ICD-9-CM
851.52	Cerebellar or brain stem contusion with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.53	Cerebellar or brain stem contusion with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.54	Cerebellar or brain stem contusion with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.55	Cerebellar or brain stem contusion with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.56	Cerebellar or brain stem contusion with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.59	Cerebellar or brain stem contusion with open intracranial wound, unspecified concussion	ICD-9-CM
851.6	Cerebellar or brain stem laceration without mention of open intracranial wound	ICD-9-CM
851.60	Cerebellar or brain stem laceration without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
851.61	Cerebellar or brain stem laceration without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
851.62	Cerebellar or brain stem laceration without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.63	Cerebellar or brain stem laceration without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.64	Cerebellar or brain stem laceration without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.65	Cerebellar or brain stem laceration without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM

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Code	Description	Code Type
851.66	Cerebellar or brain stem laceration without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.69	Cerebellar or brain stem laceration without mention of open intracranial wound, unspecified concussion	ICD-9-CM
851.7	Cerebellar or brain stem laceration with open intracranial wound	ICD-9-CM
851.70	Cerebellar or brain stem laceration with open intracranial wound, state of consciousness unspecified	ICD-9-CM
851.71	Cerebellar or brain stem laceration with open intracranial wound, no loss of consciousness	ICD-9-CM
851.72	Cerebellar or brain stem laceration with open intracranial wound, brief (less than one hour) loss of consciousness	ICD-9-CM
851.73	Cerebellar or brain stem laceration with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.74	Cerebellar or brain stem laceration with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.75	Cerebellar or brain stem laceration with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.76	Cerebellar or brain stem laceration with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.79	Cerebellar or brain stem laceration with open intracranial wound, unspecified concussion	ICD-9-CM
851.8	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound	ICD-9-CM
851.80	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
851.81	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
851.82	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.83	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.84	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to preexisting conscious level	ICD-9-CM
851.85	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.86	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.89	Other and unspecified cerebral laceration and contusion, without mention of open intracranial wound, unspecified concussion	ICD-9-CM
851.9	Other and unspecified cerebral laceration and contusion, with open intracranial wound	ICD-9-CM
851.90	Other and unspecified cerebral laceration and contusion, with open intracranial wound, unspecified state of consciousness	ICD-9-CM

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Code	Description	Code Type
851.91	Other and unspecified cerebral laceration and contusion, with open intracranial wound, no loss of consciousness	ICD-9-CM
851.92	Other and unspecified cerebral laceration and contusion, with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
851.93	Other and unspecified cerebral laceration and contusion, with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
851.94	Other and unspecified cerebral laceration and contusion, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
851.95	Other and unspecified cerebral laceration and contusion, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
851.96	Other and unspecified cerebral laceration and contusion, with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
851.99	Other and unspecified cerebral laceration and contusion, with open intracranial wound, unspecified concussion	ICD-9-CM
852	Subarachnoid, subdural, and extradural hemorrhage, following injury	ICD-9-CM
852.0	Subarachnoid hemorrhage following injury without mention of open intracranial wound	ICD-9-CM
852.00	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
852.01	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
852.02	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
852.03	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
852.04	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
852.05	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
852.06	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
852.09	Subarachnoid hemorrhage following injury, without mention of open intracranial wound, unspecified concussion	ICD-9-CM
852.1	Subarachnoid hemorrhage following injury, with open intracranial wound	ICD-9-CM
852.10	Subarachnoid hemorrhage following injury, with open intracranial wound, unspecified state of consciousness	ICD-9-CM
852.11	Subarachnoid hemorrhage following injury, with open intracranial wound, no loss of consciousness	ICD-9-CM
852.12	Subarachnoid hemorrhage following injury, with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM

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Code	Description	Code Type
852.13	Subarachnoid hemorrhage following injury, with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
852.14	Subarachnoid hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
852.15	Subarachnoid hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
852.16	Subarachnoid hemorrhage following injury, with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
852.19	Subarachnoid hemorrhage following injury, with open intracranial wound, unspecified concussion	ICD-9-CM
852.2	Subdural hemorrhage following injury without mention of open intracranial wound	ICD-9-CM
852.20	Subdural hemorrhage following injury, without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
852.21	Subdural hemorrhage following injury, without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
852.22	Subdural hemorrhage following injury, without mention of open intracranial wound, brief (less than one hour) loss of consciousness	ICD-9-CM
852.23	Subdural hemorrhage following injury, without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
852.24	Subdural hemorrhage following injury, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
852.25	Subdural hemorrhage following injury, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
852.26	Subdural hemorrhage following injury, without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
852.29	Subdural hemorrhage following injury, without mention of open intracranial wound, unspecified concussion	ICD-9-CM
852.3	Subdural hemorrhage following injury, with open intracranial wound	ICD-9-CM
852.30	Subdural hemorrhage following injury, with open intracranial wound, state of consciousness unspecified	ICD-9-CM
852.31	Subdural hemorrhage following injury, with open intracranial wound, no loss of consciousness	ICD-9-CM
852.32	Subdural hemorrhage following injury, with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
852.33	Subdural hemorrhage following injury, with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
852.34	Subdural hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
852.35	Subdural hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM

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Code	Description	Code Type
852.36	Subdural hemorrhage following injury, with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
852.39	Subdural hemorrhage following injury, with open intracranial wound, unspecified concussion	ICD-9-CM
852.4	Extradural hemorrhage following injury without mention of open intracranial wound	ICD-9-CM
852.40	Extradural hemorrhage following injury, without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
852.41	Extradural hemorrhage following injury, without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
852.42	Extradural hemorrhage following injury, without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
852.43	Extradural hemorrhage following injury, without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
852.44	Extradural hemorrhage following injury, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
852.45	Extradural hemorrhage following injury, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
852.46	Extradural hemorrhage following injury, without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
852.49	Extradural hemorrhage following injury, without mention of open intracranial wound, unspecified concussion	ICD-9-CM
852.5	Extradural hemorrhage following injury with open intracranial wound	ICD-9-CM
852.50	Extradural hemorrhage following injury, with open intracranial wound, state of consciousness unspecified	ICD-9-CM
852.51	Extradural hemorrhage following injury, with open intracranial wound, no loss of consciousness	ICD-9-CM
852.52	Extradural hemorrhage following injury, with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
852.53	Extradural hemorrhage following injury, with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
852.54	Extradural hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
852.55	Extradural hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
852.56	Extradural hemorrhage following injury, with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
852.59	Extradural hemorrhage following injury, with open intracranial wound, unspecified concussion	ICD-9-CM
853	Other and unspecified intracranial hemorrhage following injury	ICD-9-CM
853.0	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound	ICD-9-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
853.00	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM
853.01	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
853.02	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
853.03	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
853.04	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to preexisting conscious level	ICD-9-CM
853.05	Other and unspecified intracranial hemorrhage following injury. Without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
853.06	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
853.09	Other and unspecified intracranial hemorrhage following injury, without mention of open intracranial wound, unspecified concussion	ICD-9-CM
853.1	Other and unspecified intracranial hemorrhage following injury with open intracranial wound	ICD-9-CM
853.10	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, unspecified state of consciousness	ICD-9-CM
853.11	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, no loss of consciousness	ICD-9-CM
853.12	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
853.13	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
853.14	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
853.15	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
853.16	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
853.19	Other and unspecified intracranial hemorrhage following injury, with open intracranial wound, unspecified concussion	ICD-9-CM
854	Intracranial injury of other and unspecified nature	ICD-9-CM
854.0	Intracranial injury of other and unspecified nature without mention of open intracranial wound	ICD-9-CM
854.00	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, unspecified state of consciousness	ICD-9-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
854.01	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, no loss of consciousness	ICD-9-CM
854.02	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
854.03	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
854.04	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
854.05	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
854.06	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
854.09	Intracranial injury of other and unspecified nature, without mention of open intracranial wound, unspecified concussion	ICD-9-CM
854.1	Intracranial injury of other and unspecified nature with open intracranial wound	ICD-9-CM
854.10	Intracranial injury of other and unspecified nature, with open intracranial wound, unspecified state of consciousness	ICD-9-CM
854.11	Intracranial injury of other and unspecified nature, with open intracranial wound, no loss of consciousness	ICD-9-CM
854.12	Intracranial injury of other and unspecified nature, with open intracranial wound, brief (less than 1 hour) loss of consciousness	ICD-9-CM
854.13	Intracranial injury of other and unspecified nature, with open intracranial wound, moderate (1-24 hours) loss of consciousness	ICD-9-CM
854.14	Intracranial injury of other and unspecified nature, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness and return to pre-existing conscious level	ICD-9-CM
854.15	Intracranial injury of other and unspecified nature, with open intracranial wound, prolonged (more than 24 hours) loss of consciousness, without return to pre-existing conscious level	ICD-9-CM
854.16	Intracranial injury of other and unspecified nature, with open intracranial wound, loss of consciousness of unspecified duration	ICD-9-CM
854.19	Intracranial injury of other and unspecified nature, with open intracranial wound, with unspecified concussion	ICD-9-CM
907.0	Late effect of intracranial injury without mention of skull fracture	ICD-9-CM
959.01	Head injury, unspecified	ICD-9-CM
ICD-10-CM Simple Forward Mapping		
S01.90XA	Unspecified open wound of unspecified part of head, initial encounter	ICD-10-CM
S06.0X0A	Concussion without loss of consciousness, initial encounter	ICD-10-CM
S06.0X1A	Concussion with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.0X9A	Concussion with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.1X0A	Traumatic cerebral edema without loss of consciousness, initial encounter	ICD-10-CM
S06.1X1A	Traumatic cerebral edema with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.1X2A	Traumatic cerebral edema with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.1X3A	Traumatic cerebral edema with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.1X4A	Traumatic cerebral edema with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.1X5A	Traumatic cerebral edema with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.1X6A	Traumatic cerebral edema with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.1X7A	Traumatic cerebral edema with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.1X8A	Traumatic cerebral edema with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.1X9A	Traumatic cerebral edema with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.330A	Contusion and laceration of cerebrum, unspecified, without loss of consciousness, initial encounter	ICD-10-CM
S06.331A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.332A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.333A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.334A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.335A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.336A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.337A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.338A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.339A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.360A	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness, initial encounter	ICD-10-CM
S06.361A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.362A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.363A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hours to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.364A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.365A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.366A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.367A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.368A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.369A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.370A	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness, initial encounter	ICD-10-CM
S06.371A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.372A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.373A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.374A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.375A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.376A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.377A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.378A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.379A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.380A	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness, initial encounter	ICD-10-CM
S06.381A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.382A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.383A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.384A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.385A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.386A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.387A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.388A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.389A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.4X0A	Epidural hemorrhage without loss of consciousness, initial encounter	ICD-10-CM
S06.4X1A	Epidural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.4X2A	Epidural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.4X3A	Epidural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.4X4A	Epidural hemorrhage with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.4X5A	Epidural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.4X6A	Epidural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.4X7A	Epidural hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.4X8A	Epidural hemorrhage with loss of consciousness of any duration with death due to other causes prior to regaining consciousness, initial encounter	ICD-10-CM
S06.4X9A	Epidural hemorrhage with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.5X0A	Traumatic subdural hemorrhage without loss of consciousness, initial encounter	ICD-10-CM
S06.5X1A	Traumatic subdural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.5X2A	Traumatic subdural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.5X3A	Traumatic subdural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.5X4A	Traumatic subdural hemorrhage with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.5X5A	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.5X6A	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.5X7A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to brain injury before regaining consciousness, initial encounter	ICD-10-CM
S06.5X8A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to other cause before regaining consciousness, initial encounter	ICD-10-CM
S06.5X9A	Traumatic subdural hemorrhage with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.6X0A	Traumatic subarachnoid hemorrhage without loss of consciousness, initial encounter	ICD-10-CM
S06.6X1A	Traumatic subarachnoid hemorrhage with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.6X2A	Traumatic subarachnoid hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.6X3A	Traumatic subarachnoid hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.6X4A	Traumatic subarachnoid hemorrhage with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.6X5A	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.6X6A	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.6X7A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.6X8A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.6X9A	Traumatic subarachnoid hemorrhage with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.890A	Other specified intracranial injury without loss of consciousness, initial encounter	ICD-10-CM
S06.891A	Other specified intracranial injury with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.892A	Other specified intracranial injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.893A	Other specified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.894A	Other specified intracranial injury with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.895A	Other specified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.896A	Other specified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.897A	Other specified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.898A	Other specified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.899A	Other specified intracranial injury with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.9X0A	Unspecified intracranial injury without loss of consciousness, initial encounter	ICD-10-CM
S06.9X1A	Unspecified intracranial injury with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.9X2A	Unspecified intracranial injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.9X3A	Unspecified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.9X4A	Unspecified intracranial injury with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.9X5A	Unspecified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.9X6A	Unspecified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.9X9A	Unspecified intracranial injury with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.9X9S	Unspecified intracranial injury with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S09.8XXA	Other specified injuries of head, initial encounter	ICD-10-CM
S09.90XA	Unspecified injury of head, initial encounter	ICD-10-CM
ICD-10-CM Forward-Backward Mapping		
S01.90XA	Unspecified open wound of unspecified part of head, initial encounter	ICD-10-CM
S06.0X0A	Concussion without loss of consciousness, initial encounter	ICD-10-CM
S06.0X0S	Concussion without loss of consciousness, sequela	ICD-10-CM
S06.0X1A	Concussion with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.0X1S	Concussion with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.0X9A	Concussion with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.0X9S	Concussion with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.1X0A	Traumatic cerebral edema without loss of consciousness, initial encounter	ICD-10-CM
S06.1X0S	Traumatic cerebral edema without loss of consciousness, sequela	ICD-10-CM
S06.1X1A	Traumatic cerebral edema with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.1X1S	Traumatic cerebral edema with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.1X2A	Traumatic cerebral edema with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.1X2S	Traumatic cerebral edema with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.1X3A	Traumatic cerebral edema with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.1X3S	Traumatic cerebral edema with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.1X4A	Traumatic cerebral edema with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.1X4S	Traumatic cerebral edema with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.1X5A	Traumatic cerebral edema with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.1X5S	Traumatic cerebral edema with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.1X6A	Traumatic cerebral edema with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.1X6S	Traumatic cerebral edema with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.1X7A	Traumatic cerebral edema with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.1X7S	Traumatic cerebral edema with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.1X8A	Traumatic cerebral edema with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.1X8S	Traumatic cerebral edema with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.1X9A	Traumatic cerebral edema with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.1X9S	Traumatic cerebral edema with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.2X0A	Diffuse traumatic brain injury without loss of consciousness, initial encounter	ICD-10-CM
S06.2X0S	Diffuse traumatic brain injury without loss of consciousness, sequela	ICD-10-CM
S06.2X1A	Diffuse traumatic brain injury with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.2X1S	Diffuse traumatic brain injury with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.2X2A	Diffuse traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.2X2S	Diffuse traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.2X3A	Diffuse traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.2X3S	Diffuse traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.2X4A	Diffuse traumatic brain injury with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.2X4S	Diffuse traumatic brain injury with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.2X5A	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious levels, initial encounter	ICD-10-CM

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Code	Description	Code Type
S06.2X5S	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious levels, sequela	ICD-10-CM
S06.2X6A	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.2X6S	Diffuse traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.2X7A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.2X7S	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.2X8A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.2X8S	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.2X9A	Diffuse traumatic brain injury with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.2X9S	Diffuse traumatic brain injury with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.300A	Unspecified focal traumatic brain injury without loss of consciousness, initial encounter	ICD-10-CM
S06.300S	Unspecified focal traumatic brain injury without loss of consciousness, sequela	ICD-10-CM
S06.301A	Unspecified focal traumatic brain injury with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.301S	Unspecified focal traumatic brain injury with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.302A	Unspecified focal traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.302S	Unspecified focal traumatic brain injury with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.303A	Unspecified focal traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.303S	Unspecified focal traumatic brain injury with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.304A	Unspecified focal traumatic brain injury with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.304S	Unspecified focal traumatic brain injury with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.305A	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.305S	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.306A	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.306S	Unspecified focal traumatic brain injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.307A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.307S	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.308A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.308S	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.309A	Unspecified focal traumatic brain injury with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.309S	Unspecified focal traumatic brain injury with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.310A	Contusion and laceration of right cerebrum without loss of consciousness, initial encounter	ICD-10-CM
S06.310S	Contusion and laceration of right cerebrum without loss of consciousness, sequela	ICD-10-CM
S06.311A	Contusion and laceration of right cerebrum with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.311S	Contusion and laceration of right cerebrum with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.312A	Contusion and laceration of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.312S	Contusion and laceration of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.313A	Contusion and laceration of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.313S	Contusion and laceration of right cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.314A	Contusion and laceration of right cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.314S	Contusion and laceration of right cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.315A	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.315S	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.316A	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.316S	Contusion and laceration of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.317A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.317S	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.318A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.318S	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.319A	Contusion and laceration of right cerebrum with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.319S	Contusion and laceration of right cerebrum with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.320A	Contusion and laceration of left cerebrum without loss of consciousness, initial encounter	ICD-10-CM
S06.320S	Contusion and laceration of left cerebrum without loss of consciousness, sequela	ICD-10-CM
S06.321A	Contusion and laceration of left cerebrum with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.321S	Contusion and laceration of left cerebrum with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.322A	Contusion and laceration of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.322S	Contusion and laceration of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.323A	Contusion and laceration of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.323S	Contusion and laceration of left cerebrum with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.324A	Contusion and laceration of left cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.324S	Contusion and laceration of left cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.325A	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.325S	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.326A	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.326S	Contusion and laceration of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.327A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.327S	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.328A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.328S	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.329A	Contusion and laceration of left cerebrum with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.329S	Contusion and laceration of left cerebrum with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.330A	Contusion and laceration of cerebrum, unspecified, without loss of consciousness, initial encounter	ICD-10-CM
S06.330S	Contusion and laceration of cerebrum, unspecified, without loss of consciousness, sequela	ICD-10-CM
S06.331A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.331S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.332A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.332S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.333A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.333S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.334A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.334S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.335A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.335S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.336A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.336S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.337A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.337S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.338A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.338S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.339A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.339S	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.340A	Traumatic hemorrhage of right cerebrum without loss of consciousness, initial encounter	ICD-10-CM
S06.340S	Traumatic hemorrhage of right cerebrum without loss of consciousness, sequela	ICD-10-CM
S06.341A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.341S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.342A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.342S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.343A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.343S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, sequela	ICD-10-CM
S06.344A	Traumatic hemorrhage of right cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.344S	Traumatic hemorrhage of right cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.345A	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.345S	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.346A	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.346S	Traumatic hemorrhage of right cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.347A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.347S	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.348A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.348S	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.349A	Traumatic hemorrhage of right cerebrum with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.349S	Traumatic hemorrhage of right cerebrum with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.350A	Traumatic hemorrhage of left cerebrum without loss of consciousness, initial encounter	ICD-10-CM
S06.350S	Traumatic hemorrhage of left cerebrum without loss of consciousness, sequela	ICD-10-CM
S06.351A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.351S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.352A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.352S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.353A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.353S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 1 hours to 5 hours 59 minutes, sequela	ICD-10-CM
S06.354A	Traumatic hemorrhage of left cerebrum with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.354S	Traumatic hemorrhage of left cerebrum with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.355A	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.355S	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.356A	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.356S	Traumatic hemorrhage of left cerebrum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.357A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.357S	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.358A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.358S	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.359A	Traumatic hemorrhage of left cerebrum with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.359S	Traumatic hemorrhage of left cerebrum with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.360A	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness, initial encounter	ICD-10-CM
S06.360S	Traumatic hemorrhage of cerebrum, unspecified, without loss of consciousness, sequela	ICD-10-CM
S06.361A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.361S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.362A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.362S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.363A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hours to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.363S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 1 hours to 5 hours 59 minutes, sequela	ICD-10-CM
S06.364A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.364S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.365A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.365S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.366A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.366S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.367A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.367S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.368A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.368S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.369A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.369S	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.370A	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness, initial encounter	ICD-10-CM
S06.370S	Contusion, laceration, and hemorrhage of cerebellum without loss of consciousness, sequela	ICD-10-CM
S06.371A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.371S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.372A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.372S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.373A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.373S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.374A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.374S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.375A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.375S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.376A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.376S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.377A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.377S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.378A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.378S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.379A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.379S	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.380A	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness, initial encounter	ICD-10-CM
S06.380S	Contusion, laceration, and hemorrhage of brainstem without loss of consciousness, sequela	ICD-10-CM
S06.381A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.381S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.382A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.382S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.383A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.383S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.384A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.384S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.385A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.385S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.386A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.386S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.387A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.387S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.388A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.388S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.389A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.389S	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.4X0A	Epidural hemorrhage without loss of consciousness, initial encounter	ICD-10-CM
S06.4X0S	Epidural hemorrhage without loss of consciousness, sequela	ICD-10-CM
S06.4X1A	Epidural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.4X1S	Epidural hemorrhage with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.4X2A	Epidural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.4X2S	Epidural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.4X3A	Epidural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.4X3S	Epidural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.4X4A	Epidural hemorrhage with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.4X4S	Epidural hemorrhage with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.4X5A	Epidural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.4X5S	Epidural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.4X6A	Epidural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.4X6S	Epidural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.4X7A	Epidural hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.4X7S	Epidural hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.4X8A	Epidural hemorrhage with loss of consciousness of any duration with death due to other causes prior to regaining consciousness, initial encounter	ICD-10-CM
S06.4X8S	Epidural hemorrhage with loss of consciousness of any duration with death due to other causes prior to regaining consciousness, sequela	ICD-10-CM
S06.4X9A	Epidural hemorrhage with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.4X9S	Epidural hemorrhage with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.5X0A	Traumatic subdural hemorrhage without loss of consciousness, initial encounter	ICD-10-CM
S06.5X0S	Traumatic subdural hemorrhage without loss of consciousness, sequela	ICD-10-CM
S06.5X1A	Traumatic subdural hemorrhage with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.5X1S	Traumatic subdural hemorrhage with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.5X2A	Traumatic subdural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.5X2S	Traumatic subdural hemorrhage with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.5X3A	Traumatic subdural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.5X3S	Traumatic subdural hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.5X4A	Traumatic subdural hemorrhage with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.5X4S	Traumatic subdural hemorrhage with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.5X5A	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.5X5S	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.5X6A	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.5X6S	Traumatic subdural hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.5X7A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to brain injury before regaining consciousness, initial encounter	ICD-10-CM
S06.5X7S	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to brain injury before regaining consciousness, sequela	ICD-10-CM
S06.5X8A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to other cause before regaining consciousness, initial encounter	ICD-10-CM
S06.5X8S	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to other cause before regaining consciousness, sequela	ICD-10-CM
S06.5X9A	Traumatic subdural hemorrhage with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.5X9S	Traumatic subdural hemorrhage with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.6X0A	Traumatic subarachnoid hemorrhage without loss of consciousness, initial encounter	ICD-10-CM
S06.6X0S	Traumatic subarachnoid hemorrhage without loss of consciousness, sequela	ICD-10-CM
S06.6X1A	Traumatic subarachnoid hemorrhage with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.6X1S	Traumatic subarachnoid hemorrhage with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.6X2A	Traumatic subarachnoid hemorrhage with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.6X2S	Traumatic subarachnoid hemorrhage with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.6X3A	Traumatic subarachnoid hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.6X3S	Traumatic subarachnoid hemorrhage with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.6X4A	Traumatic subarachnoid hemorrhage with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.6X4S	Traumatic subarachnoid hemorrhage with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.6X5A	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.6X5S	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.6X6A	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.6X6S	Traumatic subarachnoid hemorrhage with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.6X7A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.6X7S	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.6X8A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.6X8S	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.6X9A	Traumatic subarachnoid hemorrhage with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.6X9S	Traumatic subarachnoid hemorrhage with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.810A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified without loss of consciousness, initial encounter	ICD-10-CM
S06.810S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified without loss of consciousness, sequela	ICD-10-CM
S06.811A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.811S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.812A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.812S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.813A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.813S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.814A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.814S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.815A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.815S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.816A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.816S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.817A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.817S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.818A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.818S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.819A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.819S	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.820A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified without loss of consciousness, initial encounter	ICD-10-CM
S06.820S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified without loss of consciousness, sequela	ICD-10-CM
S06.821A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.821S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.822A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.822S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.823A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.823S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.824A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.824S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.825A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.825S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.826A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.826S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.827A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.827S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.828A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.828S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.829A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.829S	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.890A	Other specified intracranial injury without loss of consciousness, initial encounter	ICD-10-CM
S06.890S	Other specified intracranial injury without loss of consciousness, sequela	ICD-10-CM
S06.891A	Other specified intracranial injury with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.891S	Other specified intracranial injury with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.892A	Other specified intracranial injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.892S	Other specified intracranial injury with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.893A	Other specified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.893S	Other specified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.894A	Other specified intracranial injury with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM
S06.894S	Other specified intracranial injury with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.895A	Other specified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.895S	Other specified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.896A	Other specified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.896S	Other specified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.897A	Other specified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.897S	Other specified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.898A	Other specified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.898S	Other specified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.899A	Other specified intracranial injury with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.899S	Other specified intracranial injury with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S06.9X0A	Unspecified intracranial injury without loss of consciousness, initial encounter	ICD-10-CM
S06.9X0S	Unspecified intracranial injury without loss of consciousness, sequela	ICD-10-CM
S06.9X1A	Unspecified intracranial injury with loss of consciousness of 30 minutes or less, initial encounter	ICD-10-CM
S06.9X1S	Unspecified intracranial injury with loss of consciousness of 30 minutes or less, sequela	ICD-10-CM
S06.9X2A	Unspecified intracranial injury with loss of consciousness of 31 minutes to 59 minutes, initial encounter	ICD-10-CM
S06.9X2S	Unspecified intracranial injury with loss of consciousness of 31 minutes to 59 minutes, sequela	ICD-10-CM
S06.9X3A	Unspecified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes, initial encounter	ICD-10-CM
S06.9X3S	Unspecified intracranial injury with loss of consciousness of 1 hour to 5 hours 59 minutes, sequela	ICD-10-CM
S06.9X4A	Unspecified intracranial injury with loss of consciousness of 6 hours to 24 hours, initial encounter	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Head Injury

Code	Description	Code Type
S06.9X4S	Unspecified intracranial injury with loss of consciousness of 6 hours to 24 hours, sequela	ICD-10-CM
S06.9X5A	Unspecified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, initial encounter	ICD-10-CM
S06.9X5S	Unspecified intracranial injury with loss of consciousness greater than 24 hours with return to pre-existing conscious level, sequela	ICD-10-CM
S06.9X6A	Unspecified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, initial encounter	ICD-10-CM
S06.9X6S	Unspecified intracranial injury with loss of consciousness greater than 24 hours without return to pre-existing conscious level with patient surviving, sequela	ICD-10-CM
S06.9X7A	Unspecified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter	ICD-10-CM
S06.9X7S	Unspecified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, sequela	ICD-10-CM
S06.9X8A	Unspecified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter	ICD-10-CM
S06.9X8S	Unspecified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, sequela	ICD-10-CM
S06.9X9A	Unspecified intracranial injury with loss of consciousness of unspecified duration, initial encounter	ICD-10-CM
S06.9X9S	Unspecified intracranial injury with loss of consciousness of unspecified duration, sequela	ICD-10-CM
S09.10XA	Unspecified injury of muscle and tendon of head, initial encounter	ICD-10-CM
S09.11XA	Strain of muscle and tendon of head, initial encounter	ICD-10-CM
S09.19XA	Other specified injury of muscle and tendon of head, initial encounter	ICD-10-CM
S09.8XXA	Other specified injuries of head, initial encounter	ICD-10-CM
S09.90XA	Unspecified injury of head, initial encounter	ICD-10-CM

Appendix C. Specifications for Parameters for this Request

Sentinel's Cohort Identification and Descriptive Analysis (CIDA) tool version 3.3.6 was used to compare the frequency of diagnoses for head injuries using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes.

Enrollment Gap: 45 days
Age Groups: 2-17, 18-44, 45-64, 65+ years
Enrollment Requirement: 183 days for incidence scenarios
Coverage Requirement: Medical and drug coverage

Scenario	Query Start Date	Query End Date	Event					
			Event	Event Code Type	Incident with Respect To:	Washout (days)	Cohort Definition	Care Setting
1	1/1/2015	3/31/2015	Head Injury	ICD-9-CM	ICD-9-CM	90	First valid event only	Any
2	1/1/2016	3/31/2016	Head Injury	ICD-10-CM Simple Forward Mapping (SFM)	ICD-10-CM SFM	90	First valid event only	Any
3	1/1/2016	3/31/2016	Head Injury	ICD-10-CM Forward-Backward Mapping (FBM)	ICD-10-CM FBM	90	First valid event only	Any
4	10/1/2010	6/30/2016	Head Injury	ICD-9-CM	ICD-9-CM or ICD-10-CM SFM	183	First valid event only	Any
5	10/1/2010	6/30/2016	Head Injury	ICD-9-CM	ICD-9-CM or ICD-10-CM FBM	183	First valid event only	Any
6	10/1/2010	6/30/2016	Head Injury	ICD-10-CM SFM	ICD-9-CM or ICD-10-CM SFM	183	First valid event only	Any
7	10/1/2010	6/30/2016	Head Injury	ICD-10-CM FBM	ICD-9-CM or ICD-10-CM SFM	183	First valid event only	Any

ICD-9-CM and ICD-10-CM are provided by Optum360. ICD-10-CM codes were mapped from ICD-9-CM codes using the Centers for Medicare and Medicaid Services General Equivalence Mappings.