APPENDIX 1. Mayo Adapted HICD-A codes

Mayo Adapted HICD-A	CODE DESCRIPTION
02985000	PSYCHOSIS, ACUTE, WITH TRAUMA, BRAIN
02985110	PSYCHOSIS, ACUTE, WITH BRAIN TRAUMA
02985120	SYNDROME, AMNESTIC, TRAUMATIC (ACUTE)
02995000	PSYCHOSIS, CHRONIC, WITH BRAIN TRAUMA
02995110	PSYCHOSIS, CHRONIC, WITH TRAUMA, BRAIN
03042000	SYNDROME, ACUTE, BRAIN, WITH TRAUMA
03042120	SYNDROME, POST-CONTUSION, BRAIN NOS
03042130	SYNDROME, FRONTAL LOBE, POST-TRAUMA
03052000	SYNDROME, CHRONIC, BRAIN, WITH TRAUMA
03052110	SYNDROME, BRAIN, ORGANIC, CHRONIC, C BRAIN TRAUMA
03052130	SYNDROME, POST-CONTUSION, BRAIN CHRONIC
04310000	HEMORRHAGE, SUBDURAL, NOS
04310110	HEMORRHAGE, SUBDURAL, NOS
04310111	HEMATOMA, SUBDURAL, NOS
04310120	HEMATOMA, EPIDURAL, ACUTE
04310130	HEMATOMA, EPIDURAL, NOS
04310131	HEMATOMA, EXTRADURAL, NOS, SEE ALSO EPIDURAL
04310140	HEMATOMA, SUBDURAL, ACUTE
04310150	HEMATOMA, SUBDURAL, CHRONIC
04311000	HEMORRHAGE, SUBDURAL, WITH PARALYSIS
04311110	HEMORRHAGE, SUBDURAL, WITH PARALYSIS
07610810	DAMAGE, BRAIN, DUE TO BIRTH INJURY
07610811	INJURY, BIRTH, BRAIN
07619510	TRAUMA, BIRTH, NEC
07700000	COMA
07700110	COMATOSE
07700111	COMA, NOS
07700112	UNCONSCIOUS-SEE ALSO DISORDER
07700120	COMA, NOS, CAUSE SPECIFIED
07700130	COMA, SPINDLE
07700140	VEGETATIVE STATE (CNS)
07707110	AMNESIA, POST-TRAUMATIC
07755110	DISORDER, CONSCIOUSNESS, CAUSE SPECIFIED
07920120	HEADACHE, POST TRAUMA
08000000	FRACTURE, SKULL VAULT, CLOSED
08000010	FRACTURE, SKULL, VAULT
08000020	FRACTURE, SKULL, FRONTAL
08000030	FRACTURE, SKULL, VERTEX
08000040	FRACTURE, SKULL, PARIETAL

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
08001000	FRACTURE, SKULL VAULT, OPEN
08001010	FRACTURE, SKULL VAULT, OPEN
08001020	FRACTURE, SKULL, FRONTAL, OPEN
08001030	FRACTURE, SKULL, VERTEX, OPEN
08001040	FRACTURE, SKULL, PARIETAL, OPEN
08009000	FRACTURE, SKULL VAULT, LATE EFFECT
08009010	FRACTURE, SKULL VAULT, LATE EFFECT
08009020	FRACTURE, SKULL, FRONTAL, LATE EFFECT
08009030	FRACTURE, SKULL, VERTEX, LATE EFFECT
08009040	FRACTURE, SKULL, PARIETAL, LATE EFFECT
08010000	FRACTURE, SKULL BASE, CLOSED
08010110	FRACTURE, SKULL, ANTERIOR FOSSA
08010120	FRACTURE, SKULL, BASE
08010130	FRACTURE, SKULL, MIDDLE FOSSA
08010140	FRACTURE, SKULL, POSTERIOR FOSSA
08010150	FRACTURE, SKULL, OCCIPITAL
08010160	FRACTURE, SKULL, ANTRUM
08010170	FRACTURE, SKULL, ETHMOID
08010180	FRACTURE, SKULL, SPHENOID
08010190	FRACTURE, SKULL, TEMPORAL
08010200	FRACTURE, SINUS, CODE ALSO FRACTURE SKULL, PART SPECIFIED
08010210	FRACTURE, MALLEUS (EAR)
08011000	FRACTURE, SKULL BASE, OPEN
08011110	FRACTURE, SKULL, ANTERIOR FOSSA, OPEN
08011120	FRACTURE, SKULL, BASE, OPEN
08011121	FRACTURE, SKULL, OPEN
08011130	FRACTURE, SKULL, MIDDLE FOSSA, OPEN
08011140	FRACTURE, SKULL, POSTERIOR FOSSA, OPEN
08011150	FRACTURE, SKULL, OCCIPITAL, OPEN
08011160	FRACTURE, SKULL, ANTRUM, OPEN
08011170	FRACTURE, SKULL, ETHMOID, OPEN
08011180	FRACTURE, SKULL, SPHENOID, OPEN
08011190	FRACTURE, SKULL, TEMPORAL, OPEN
08011210	FRACTURE, MALLEUS, OPEN
08019000	FRACTURE, SKULL BASE, LATE EFFECT
08019110	FRACTURE, SKULL, ANTERIOR FOSSA, LATE EFFECT
08019120	FRACTURE, SKULL, BASE, LATE EFFECT
08019130	FRACTURE, SKULL, MIDDLE FOSSA, LATE EFFECT
08019140	FRACTURE, SKULL, POSTERIOR FOSSA, LATE EFFECT

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
08019150	FRACTURE, SKULL, OCCIPITAL, LATE EFFECT
08019160	FRACTURE, SKULL, ANTRUM, LATE EFFECT
08019170	FRACTURE, SKULL, ETHMOID, LATE EFFECT
08019180	FRACTURE, SKULL, SPHENOID, LATE EFFECT
08019190	FRACTURE, SKULL, TEMPORAL, LATE EFFECT
08019210	FRACTURE, MALLEUS, LATE EFFECT
08019220	FRACTURE, MALLEUS, OLD
08020000	FRACTURE, NASAL, CLOSED
08020110	FRACTURE, NOSE
08021000	FRACTURE, NASAL, OPEN
08021110	FRACTURE, NOSE, OPEN
08022000	FRACTURE, MANDIBLE, CLOSED
08022110	FRACTURE, JAW, LOWER
08022111	FRACTURE, MANDIBLE
08022112	FRACTURE, MAXILLA, INFERIOR, SEE ALSO FRACTURE, MANDIBLE
08022210	FRACTURE, JAW, NOS
08023000	FRACTURE, MANDIBLE, OPEN
08023110	FRACTURE, MANDIBLE, OPEN
08023111	FRACTURE, JAW, LOWER, OPEN
08023210	FRACTURE, JAW, NOS, OPEN
08024000	FRACTURE, FACIAL BONE, NEC, CLOSED
08024110	FRACTURE, PALATE
08024120	FRACTURE, ORBIT
08024121	FRACTURE, ORBIT, BLOWOUT
08024130	FRACTURE, JAW, UPPER
08024131	FRACTURE, MAXILLA
08024132	FRACTURE, MAXILLARY ANTRUM
08024133	FRACTURE, ANTRUM, MAXILLARY
08024134	FRACTURE, LA FORTE'S, SEE ALSO FRACTURE MAXILLA
08024140	FRACTURE, MALAR BONE
08024150	FRACTURE, FACE BONE
08024151	FRACTURE, FACIAL
08024160	FRACTURE, ZYGOMA
08025000	FRACTURE, FACIAL BONE, NEC, OPEN
08025110	FRACTURE, PALATE, OPEN
08025120	FRACTURE, ORBIT, OPEN
08025130	FRACTURE, JAW, UPPER, OPEN
08025131	FRACTURE, MAXILLA, OPEN
08025132	FRACTURE, MAXILLARY ANTRUM, OPEN

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
08025140	FRACTURE, MALAR BONE
08025150	FRACTURE, FACE BONE
08025151	FRACTURE, FACIAL
08025160	FRACTURE, ZYGOMA, OPEN
08029000	FRACTURE, FACIAL BONE, NEC, LATE EFFECT
08029110	FRACTURE, PALATE, LATE EFFECT
08029120	FRACTURE, ORBIT, LATE EFFECT
08029130	FRACTURE, JAW, UPPER, LATE EFFECT
08029131	FRACTURE, MAXILLA, LATE EFFECT
08029132	FRACTURE, MAXILLARY ANTRUM, LATE EFFECT
08029141	FRACTURE, MALAR BONE, LATE EFFECT
08029151	FRACTURE, FACIAL, LATE EFFECT
08029152	FRACTURE, FACE BONE, LATE EFFECT
08029160	FRACTURE, ZYGOMA, LATE EFFECT
08029170	FRACTURE, NOSE, LATE EFFECT
08029180	FRACTURE, MANDIBLE, LATE EFFECT
08029181	FRACTURE, JAW, LOWER, LATE EFFECT
08029190	FRACTURE, JAW, NOS, LATE EFFECT
08029210	FRACTURE, PALATE, OLD
08029220	FRACTURE, ORBIT, OLD
08029230	FRACTURE, MAXILLA, OLD
08029231	FRACTURE, JAW, UPPER, OLD
08029240	FRACTURE, MALAR BONE, OLD
08029250	FRACTURE, FACE BONE, OLD
08029251	FRACTURE, FACIAL, OLD
08029260	FRACTURE, ZYGOMA, OLD
08029270	FRACTURE, NOSE, OLD
08029280	FRACTURE, MANDIBLE, OLD
08029281	FRACTURE, JAW, LOWER, OLD
08029290	FRACTURE, JAW, NOS, OLD
08030000	FRACTURE, SKULL, NEC, CLOSED
08030110	FRACTURE, SKULL, NOS
08031000	FRACTURE, SKULL, NEC, OPEN
08031110	FRACTURE, SKULL, NOS, OPEN
08039000	FRACTURE, SKULL, LATE EFFECT
08039110	FRACTURE, SKULL, NOS, LATE EFFECT
08039210	FRACTURE, SKULL, OLD
08500000	CONCUSSION, CURRENT
08500110	CONCUSSION, NOS

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
08500120	CONCUSSION, BRAIN, WITHOUT SKULL FRACTURE
08500130	COMMOTIO CEREBRI (WITHOUT SKULL FRACTURE)
08509000	CONCUSSION, LATE EFFECT
08509110	ENCEPHALOPATHY, DUE TO TRAUMA
08509111	ENCEPHALOPATHY, POST-TRAUMATIC
08509112	PORENCEPHALY, POST-TRAUMATIC
08509210	CONCUSSION, LATE EFFECT
08509211	SYNDROME, CONCUSSION (LATE EFFECT)
08510000	LACERATION, OR CONTUSION, CEREBRAL
08510110	CONTUSION, BRAIN
08510111	CONTRA COUP (COUP CONTRA COUP)
08510120	LACERATION, TENTORIUM CEREBELLI
08510121	LACERATION, CORTEX, CEREBRAL
08510122	LACERATION, CEREBRAL
08510123	LACERATION, CEREBELLUM
08510130	COMPRESSION, BRAIN, DUE TO LACERATION OR CONTUSION
08511000	LACERATION, CEREBRAL, OPEN
08511110	WOUND, BULLET, INTRACRANIAL
08511111	WOUND, GUNSHOT, INTRACRANIAL
08511120	CONTUSION, BRAIN, WITH OPEN INTRACRANIAL WOUND
08511121	WOUND, OPEN, BRAIN
08511122	LACERATION, CEREBRAL, WITH OPEN INTRACRANIAL WOUND
08519000	LACERATION, CEREBRAL, LATE EFFECT
08519110	WOUND, OPEN, BRAIN, LATE EFFECT
08519120	CONTUSION, BRAIN, LATE EFFECT
08519130	LACERATION, CEREBRAL, LATE EFFECT
08520000	HEMORRHAGE, SUBARACHNOID, SUBDURAL OR EXTRADURAL
08520110	HEMATOMA, SUBARACHNOID, TRAUMATIC
08520111	HEMORRHAGE, SUBARACHNOID, TRAUMATIC
08520120	HEMATOMA, SUBDURAL, TRAUMATIC
08520121	HEMORRHAGE, SUBDURAL, TRAUMATIC
08520122	HEMATOMA, EPIDURAL, TRAUMATIC
08521000	HEMORRHAGE, SUBARACHNOIN, SUBDURAL OR EXTRADURAL, OPEN
08521110	HEMATOMA, SUBARACHNOID, TRAUMATIC
08521111	HEMORRHAGE, SUBARACHNOID, TRAUMATIC
08521120	HEMATOMA, SUBDURAL, TRAUMATIC
08521121	HEMORRHAGE, SUBDURAL, WITH OPEN INTRACRANIAL WOUND
08529000	HEMORRHAGE, SUBARACHNOID, SUBDURAL OR EXTRADURAL, LATE EFFECT
08529110	HEMORRHAGE, SUBARACHNOID, LATE EFFECT

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
08529111	HEMATOMA, SUBARACHNOID, LATE EFFECT, TRAUMATIC
08529112	HEMIPLEGIA, SUBARACHNOID, LATE EFFECT, HEMORRHAGE, TRAUMATIC
08529120	HEMORRHAGE, SUBDURAL, LATE EFFECT, TRAUMATIC
08529121	HEMATOMA, SUBDURAL, LATE EFFECT, TRAUMATIC
08529122	HEMIPLEGIA, SUBDURAL, LATE EFFECT, TRAUMATIC
08529130	HEMATOMA, EXTRADURAL, LATE EFFECT, TRAUMATIC
08529131	HEMORRHAGE, EXTRADURAL, LATE EFFECT, TRAUMATIC
08529132	HEMIPLEGIA, ALTERNANS FACIA, EXTRADURAL, LATE EFFECT, TRAUMATIC
08530000	HEMORRHAGE, INTRACRANIAL, NEC
08530110	COMPRESSION, BRAIN, DUE TO INJURY
08530120	HEMORRHAGE, BRAIN, TRAUMATIC
08530121	HEMIPLEGIA, BRAIN, TRAUMATIC
08530122	HEMATOMA, BRAIN, TRAUMATIC
08531000	HEMORRHAGE, INTRACRANIAL, NEC, OPEN
08531110	HEMIPLEGIA, BRAIN, WITH OPEN INTRACRANIAL WOUND
08531111	HEMORRHAGE, BRAIN, WITH OPEN INTRACRANIAL WOUND
08531112	HEMATOMA, BRAIN, WITH OPEN INTRACRANIAL WOUND
08539000	HEMORRHAGE, INTRACRANIAL, NEC, LATE EFFECT
08539110	HEMIPLEGIA, BRAIN, HEMORRHAGE, LATE EFFECT, TRAUMATIC
08539111	HEMORRHAGE, BRAIN, LATE EFFECT, TRAUMATIC
08539112	HEMATOMA, BRAIN, LATE EFFECT, TRAUMATIC
08540000	INJURY, INTRACRANIAL, NEC
08540110	INJURY, INTRACRANIAL, NOS
08540210	INJURY, HEAD, NEC, (INTRACRANIAL)–CHI
08540220	SYNDROME, HEAD, TRAUMATIC
08540310	CONCUSSION, OSSEOUS LABYRINTH
08540311	CONCUSSION, LABYRINTH
08541000	INJURY, INTRACRANIAL, NEC, OPEN
08541110	INJURY, HEAD, NEC, (INTRACRANIAL), WITH OPEN INTRACRANIAL WOUND
08541120	INJURY, INTRACRANIAL, WITH OPEN INTRACRANIAL WOUND
08541210	LACERATION, INTRACRANIAL
08541220	FOREIGN BODY, INTRACRANIAL
08541230	WOUND, OPEN, INTRACRANIAL
08549000	INJURY, INTRACRANIAL, NEC, LATE EFFECT
08549110	IRRITATION, BRAIN, BY SCAR TISSUE
08549120	EPILEPSY, TRAUMATIC
08549130	INJURY, HEAD, NEC, (INTRACRANIAL), LATE EFFECT
08549131	POSTURING, DECEREBRATE, POST-TRAUMATIC
08549140	INJURY, INTRACRANIAL, LATE EFFECT

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
08690130	CONCUSSION, BLAST
08730000	LACERATION, SCALP
08730110	WOUND, OPEN, HEAD
08730120	INJURY, SCALP, NOS
08730130	WOUND, OPEN, SCALP
08730131	LACERATION, SCALP
08731000	LACERATION, SCALP, COMPLICATED
08731110	WOUND, OPEN, HEAD, NEC, COMPLICATED
08731111	FOREIGN BODY, HEAD, NEC
08731120	INJURY, SCALP, COMPLICATED
08731130	WOUND, OPEN, SCALP, COMPLICATED
08731140	WOUND, OPEN, INFECTED, HEAD, CODE ALSO BY SITE, COMPLICATED
08737140	WOUND, OPEN, FOREHEAD
08738140	WOUND, OPEN, FOREHEAD, COMPLICATED
09002210	INJURY, HEAD, ARTERY, NEC
09002220	INJURY, HEAD, VEIN, NEC
09002230	ANEURYSM, HEAD, ARTERY, NEC, TRAUMATIC
09003110	INJURY, HEAD, ARTERY, NOS
09003120	INJURY, HEAD, VEIN, NOS
09003130	ANEURYSM, HEAD, ARTERY, NOS, TRAUMATIC
09003132	FISTULA, ARTERIOVENOUS, HEAD, TRAUMATIC
09003141	HEMATOMA, ARTERIAL, HEAD, CODE ALSO INJURY, VASCULAR BY SITE
09100140	INJURY, SCALP, SUPERFICIAL, NOS
09100141	INJURY, HEAD, SUPERFICIAL
09101140	INJURY, SCALP, SUPERFICIAL, INFECTED
09198000	INJURY, MULTIPLE, NOS
09198110	INJURY, MULTIPLE SITES, NEC
09198111	INJURY, NOS
09198112	TRAUMA, NOS, SEE ALSO INJURY BY SITE
09198113	AVULSION, NOS, SEE ALSO WOUND/INJURY TYPE SPECIFIED
09198114	SWELLING, TRAUMATIC-SEE ALSO INJURY BY SITE
09198120	INJURY, MULTIPLE SITES, NOS
09198130	HEMATOMA, SUBUNGUAL, NOS
09199111	SYNDROME, POST TRAUMATIC
09200160	CONTUSION, HEAD
09200161	HEMATOMA, HEAD
09200162	CONTUSION, FOREHEAD
09200170	CONTUSION, SCALP
09200171	CONTUSION, CAPITIS

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
09200172	HEMATOMA, SCALP
09200180	HEMATOMA, PERICRANIAL
09209110	HEMATOMA, PERICRANIAL, LATE EFFECT
09209113	HEMATOMA, CAPITIS, LATE EFFECT
09209117	HEMATOMA, SCALP, LATE EFFECT
09250110	HEMATOMA, SCALP, LATE EFFECT
09250111	CONTUSION, MULTIPLE SITES
09250112	ECCHYMOSIS, TRAUMATIC, NOS, SEE ALSO CONTUSION
ICD-9-CM	**CODE DESCRIPTION**
294.0	AMNESTIC SYNDROME
310.0	FRONTAL LOBE SYNDROME
310.2	POSTCONCUSSION SYNDROME
432	OTHER AND UNSPECIFIED INTRACRANIAL HEMORRHAGE
767.0	SUBDURAL AND CEREBRAL HEMORRHAGE DUE TO BIRTH TRAUMA
767.9	UNSPECIFIED BIRTH TRAUMA
780.0	ALTERATION OF CONSCIOUSNESS
800	FRACTURE OF VAULT OF SKULL
801	FRACTURE OF BASE OF SKULL
802	FRACTURE OF FACE BONES
803	OTHER AND UNQUALIFIED SKULL FRACTURES
804	MULTIPLE FRACTURES INVOLVING SKULL OR FACE WITH OTHER BONES
850	CONCUSSION
851	CEREBRAL LACERATION AND CONTUSION
852	SUBARACHNOID, SUBDURAL, AND EXTRADURAL HEMORRHAGE, FOLLOWING INJURY
853	OTHER AND UNSPECIFIED INTRACRANIAL HEMORRHAGE FOLLOWING INJURY
854	INTRACRANIAL INJURY OF OTHER AND UNSPECIFIED NATURE
873.0	OPEN WOUND OF SCALP, WITHOUT MENTION OF COMPLICATION
873.1	OPEN WOUND OF SCALP, COMPLICATED
873.42	OPEN WOUND OF FOREHEAD, UNCOMPLICATED
873.52	OPEN WOUND OF FOREHEAD, COMPLICATED
873.8	OTHER AND UNSPECIFIED OPEN WOUND OF HEAD WITHOUT MENTION OF COMPLICATION
900.9	INJURY TO UNSPECIFIED BLOOD VESSEL OF HEAD AND NECK
905.0	LATE EFFECT OF FRACTURE OF SKULL AND FACE BONES
906.0	LATE EFFECT OF OPEN WOUND OF HEAD, NECK, AND TRUNK
906.3	LATE EFFECT OF CONTUSION
907.0	LATE EFFECT OF INTRACRANIAL INJURY WITHOUT MENTION OF SKULL FRACTURE
908.6	LATE EFFECT OF CERTAIN COMPLICATIONS OF TRAUMA

APPENDIX 1 (continued)

Mayo Adapted HICD-A	CODE DESCRIPTION
910.8	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FACE, NECK, AND SCALP, W/O MENTION OF INFECTION
910.9	OTHER AND UNSPECIFIED SUPERFICIAL INJURY OF FACE, NECK, AND SCALP, INFECTED
920	CONTUSION OF FACE, SCALP, AND NECK EXCEPT EYE(S)
959.8	OTHER AND UNSPECIFIED INJURY TO OTHER SPECIFIED SITES, INCLUDING MULTIPLE
959.9	OTHER AND UNSPECIFIED INJURY TO UNSPECIFIED SITE

APPENDIX 2. Mayo traumatic brain injury (TBI) classification system[a]

A. Classify as Definite TBI if one or more of the following criteria apply:

1. Death due to this TBI
2. Loss of consciousness of 30 minutes or more
3. Post-traumatic anterograde amnesia of 24 hours or more
4. Worst Glasgow Coma Scale full score in first 24 hours <13 (unless invalidated upon review, eg, attributable to intoxication, sedation, systemic shock)
5. One or more of the following present:
   - Intracerebral hematoma
   - Subdural hematoma
   - Epidural hematoma
   - Cerebral contusion
   - Hemorrhagic contusion
   - Penetrating TBI (dura penetrated)
   - Subarachnoid hemorrhage

B. If none of Criteria A apply, classify as Probable TBI if one or more of the following criteria apply:

1. Loss of consciousness of momentary to less than 30 minutes
2. Post-traumatic anterograde amnesia of momentary to less than 24 hours
3. Depressed, basilar or linear skull fracture (dura intact)

C. If none of Criteria A or B apply, classify as Possible (Symptomatic) TBI if one or more of the following symptoms are present:

- Blurred vision
- Confusion (mental state changes)
- Dazed
- Dizziness
- Focal neurologic symptoms
- Headache
- Nausea

[a]Adapted from Malec JF, Brown AW, Leibson CL, Flaada JT, Mandrekar JN, Diehl NN, Perkins PK. The Mayo classification system for traumatic brain injury severity. J Neurotrauma. 2007;24:1417-24.

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