

Categorization of imaging* findings from radiology reports

Multi-site review of ICD-10-CM codes for intracranial injury and skull fracture treated in emergency departments

Fracture of the following bones		
Positive for Traumatic Brain Injury (TBI) including non-displaced or probable fracture	Suspected TBI	Not TBI
Calvarium (<i>combination of a portion of the frontal, occipital and parietal bones</i>) Ethmoid sinus, ethmoid air cell (<i>any wall - anterior, superior, posterior, inferior or lateral</i>) Fossa (<i>anterior, middle or posterior</i>) Frontal bone Frontal sinus Lamina papyracea (<i>right, left or ethmoid</i>) Posterior wall of the maxillary sinus Occipital condyle, occipital bone, occipital calvarium Orbital roof, superior orbit Orbital wall (<i>medial, lateral, right or left; but NOT orbital rim</i>) Orbital fracture, orbital blowout fracture (<i>not further specified</i>) Parietal bone Quadripod, quadramalar fracture Skull (<i>not further specified</i>) Sphenoid bone Temporal bones Zygomaticomaxillary complex fracture	Any of the bones in the positive category with documentation of "suspected," "questionable" or "possible" fracture or a fracture of the inferior orbital wall	Le Fort fracture (I, II or III) Mandible, mandibular condyle Mastoid air cells, tegmen mastoideum (<i>roof of mastoid air cells</i>) Maxilla, maxillary bone Maxillary sinus wall (<i>any wall except posterior, i.e. anterior, superior, inferior or lateral</i>) Nasal bone, nasal septum Orbital floor Orbital rim (<i>inferior, infra-, lateral; orbital rim is NOT the same as orbital wall</i>) Pterygoid plate Septal fracture Zygoma, zygomatic arch
Hemorrhage/bleeding in the following areas		
Positive for Traumatic Brain Injury (TBI)	Suspected TBI	Not TBI
Hemorrhage in antrum Hemorrhage in ethmoid sinus/ air cell Epidural hemorrhage Intracerebral hemorrhage Intracranial hemorrhage Intraventricular hemorrhage Parenchymal hemorrhage Subarachnoid hemorrhage Subdural hemorrhage		Cephalohematoma over right lateral convexity Bleeding in frontal sinus Bleeding in intra or extraconal regions Intraorbital hemorrhage Bleeding in mastoid air cells or mastoid cavity Bleeding in maxillary sinus or maxillary antrum
Other findings in the radiology report		
Positive for Traumatic Brain Injury (TBI)	Suspected TBI	Not TBI
Edema of frontal lobe or other part of the brain Extra-axial fluid Fluid in ethmoid sinus/air cell Intracranial air/pneumocephalus Orbital herniation into ethmoid sinus/air cell Traumatic brain injury		Cerebral atrophy, volume loss "Chronic" or "old" injuries Extraconal gas Facial gas Fluid in mastoid air cells or mastoid cavity Injury of nasolacrimal duct Neoplasms, cancers Herniation of orbital or extraconal fat Air in orbital soft tissue Proptosis Subcutaneous emphysema

*Imaging with or without contrast