

## Supplementary Data

SUPPLEMENTARY TABLE 1. DEFINITION OF DATA ELEMENTS

<i>Data element</i>	<i>Definition</i>
Age	Chronological age at the time of intracranial pressure monitor insertion.
Sex	Gender assigned within the medical record.
Race	Race of patient within medical record. Multiple entries possible if child is of mixed race. White (Caucasian), Black, and Other were combined from this analysis.
Weight	Weight (in kilograms) at the time of intracranial pressure monitor insertion.
Primary language	Language spoken by family as described within the medical record.
Glasgow Coma Scale (GCS) score	GCS score obtained at the study hospital that placed the intracranial pressure monitor and caused the monitor to be placed (qualifying examination).
Cause of Injury	Cause of traumatic brain injury recorded from a list of options from the Common Data Elements and unique data elements generated for this study.
Railway	Traumatic brain injury caused by an impact by a train.
Motor vehicle traffic	Traumatic brain injury caused by a motor vehicle on a public street/highway/sidewalk. Included in this category are pedestrians or bicyclists that are struck by a moving car.
Motor vehicle non-traffic	Traumatic brain injury caused by a motor vehicle in a place other than a public highway, such as all-terrain vehicles and snowmobiles.
Other road vehicle	Accidents involving non-motor vehicles. These include bicycle accidents not involving a motor vehicle (for example bike vs. bike), accidents involving animal-drawn vehicles, and accidents involving animals being ridden.
Vehicle (not-specified)	Accidents involving powered vehicles used solely within the buildings and premises of an industrial or commercial establishment, accidents involving cable cars not running on rails, and accidents involving other vehicles not elsewhere classified.
Accidental fall	Fall on or from stairs, ladders, out of building, from one level to another, on same level from slipping/tripping/stumbling, on same level by collision/pushing/shoving by or with another person.
Environmental factors	Accidents due to lightning, cataclysmic storms/floods resulting from storms, cataclysmic earth surface movements, and eruptions.
Suicide/self-injury	Traumatic brain injury caused by an act of the child in an attempt to cause self-harm.
Homicide/assault	Homicide and injury purposely inflicted by other persons.
Other	Accidents not classifiable in above categories. These include accidentally being struck by a falling object, striking against or struck accidentally by objects or persons, caught accidentally in or between objects.
Type of injury	
Closed	Traumatic brain injury a result of a blow to the head that may have fractured the skull but did not penetrate the skull.
Penetrating	Traumatic brain injury as a result of an object penetrating the skull and injuring the brain.
Blast	Traumatic brain injury as a result of a blast of an object outside of the body near the head.
Crush	Traumatic brain injury as a result of an injury that crushed the brain and skull.
Mechanism of injury	
Acceleration/deceleration	No direct impact is documented in the records and the circumstances are consistent with a sudden stopping of the head while it was in motion.
Direct impact: blow to head	A direct impact is documented within the available records, usually indicated by bruising of part of the scalp, fractures of skull or other external signs of injury. The documentation generally supports that a moving object has hit the head that was stationary.
Direct impact: head against object	As above, except the documentation generally supports that the subject's head was moving at some velocity and struck a basically stationary object.
Crush	The documentation supports that the subjects head was crushed between two objects.
Blast	The documentation supports that the traumatic brain injury occurred in relation to a blast explosion.
Ground level fall	The documentation supports that the subject was at a standing height when they suffered a fall.
Fall from height >1 meter	The documentation supports that the traumatic brain injury occurred as a result of a fall from a height greater than the standing height.
Gunshot wound	The documentation supports that the child had a gunshot that penetrated into the head.
Other penetrating injury	The documentation supports that a penetrating object, such as a knife or arrow, penetrated the skull and caused the traumatic brain injury.

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SUPPLEMENTARY TABLE 1. (CONTINUED)

<i>Data element</i>	<i>Definition</i>
Likelihood of under the influence	Instructions were made to determine the likelihood that the subject was under the influence of alcohol/drugs at the time of the injury.
None	Patient was not under the influence of alcohol/drugs.
Suspected	The documentation indicates that the clinical team suspects that the subject was under the influence of alcohol/drugs when the injury occurred, but there is no conclusive evidence for this in the medical record.
Confirmed	The documentation confirms that the subject was under the influence of alcohol/drugs at the time when the injury occurred.
Transported to study hospital from: Scene of injury	Instructions were made to determine the mode of transportation to the study hospital. The documentation supports that the child was transported to the study hospital from the scene of the injury by emergency personnel.
Home	The documentation supports that the child was transported to the study hospital from the home.
Other facility	The documentation supports that the child was initially transported to another medical facility before arriving at the study hospital.
Abbreviated Injury Scores (AIS)	AIS scores generated from reviewing the medical records of study children in accordance with the AIS manual (distributed to all study sites).
Injury Severity Scores (ISS)	ISS scores generated from reviewing the medical records of study children in accordance with the manual.
Pre-hospital events	Events within this category are intended to have occurred prior to arrival at the study hospital. Clinical staff were instructed to answer “yes” for subjects where documentation demonstrates the event occurred, answer “no” for subjects where documentation demonstrates the event did not occur, answer “suspected” if the documentation suggests that the event occurred but without definitive proof of the event in the records.
Apnea	Apnea is defined as a cessation of breathing for 20 sec or longer or a shorter respiratory pause that is associated with bradycardia, cyanosis, pallor, and/or marked hypotonia.
Aspiration	Aspiration is defined as the drawing of a foreign substance, such as gastric contents, into the respiratory tract during inhalation.
Cardiac arrest	Cardiac arrest is defined as the cessation of heart function sufficiently severe to require chest compressions.
Hypotension	Hypotension is defined based on the systolic blood pressure (SBP) as follows: neonates (0–28 days of age), SBP <60 mm Hg; infants from 1 month to 12 months, SBP <70 mm Hg; children >1 year to 10 years, SBP <70 + (2 × age in years); children older than 10 years, SBP <90 mm Hg.
Hypoxia	Hypoxia is defined as oxygen saturation <90% for 30 min.
Seizure	Seizure is defined as a seizure diagnosed by the care team in the medical record or diagnosed by electroencephalography by a neurologist.
Hyperthermia	Hyperthermia is defined as a rectal temperature >38°C for at least 1 recording.
Hypothermia	Hypothermia is defined as rectal temperature <35.5°C for at least 1 recording.
Hyperventilation	Hyperventilation is defined as an arterial carbon dioxide concentration or end-tidal CO <sub>2</sub> < 30 mm Hg for at least 1 recording.
Resuscitation events, therapies, and laboratory results	All aspects of this category occurred from the time of arrival to the study hospital to the placement of the intracranial pressure monitor. Because of the timing of these events at the study hospital, only “yes” or “no” responses were permitted.
Cardiac arrest	Cardiac arrest is defined as the cessation of heart function sufficiently severe to require chest compressions for any duration of time.
Hypotension	Hypotension is defined based on the systolic blood pressure (SBP) as follows: neonates (0–28 days of age), SBP <60 mm Hg; infants from 1 month to 12 months, SBP <70 mm Hg; children >1 year to 10 years, SBP <70 + (2 × age in years); children older than 10 years, SBP <90 mm Hg for at least 1 recording.
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Hypothermia	Hypothermia is defined as rectal temperature <35.5°C for at least 1 recording.
Hyperventilation	Hyperventilation is defined as an arterial carbon dioxide concentration or end-tidal CO <sub>2</sub> < 30 mm Hg for at least 1 recording.
Medications	
Anticonvulsant	Site personnel were instructed to check all that apply for anticonvulsants including phenytoin, levetiracetam, phenobarbital, oxcarbazepine, primidone, topiramate, carbamazepine, valproic acid, or other anticonvulsant. For this analysis, a single agent was required to answer

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SUPPLEMENTARY TABLE 1. (CONTINUED)

<i>Data element</i>	<i>Definition</i>
	“yes” in the analysis.
Hypertonic saline	Indicated “yes” if a hypertonic saline solution was administered.
Mannitol	Indicated “yes” if mannitol was administered.
Barbiturate	Indicated “yes” if a barbiturate was administered.
Fluids administered	Total amount of all fluids administered was calculated.
Fluid output	Total amount of all fluid output was calculated.
Laboratory results	Site personnel were instructed to record all of the variables outlined. If multiple values were obtained, personnel were instructed to record the first reading obtained. All blood gas information was only recorded if the blood gas was obtained from an artery.
Pediatric Risk of Mortality (PRISM) III measures	PRISM III measures were obtained in accordance with published norms. Importantly, values were obtained within the first 12 h of admission to the study hospital.
Neurological examination	Site personnel were instructed to document the examination performed at the time of intracranial pressure monitor placement (qualifying examination).
Intubated	Site personnel were instructed to determine if the child was pharmacologically paralyzed, sedated and/or intubated.
Pupils	Site personnel were instructed to determine if both pupils were fixed, one pupil was fixed or neither pupil was fixed.
Gaze	Site personnel were instructed to determine if the gaze was normal, abnormal or not tested.
Corneal	Site personnel were instructed to determine if the corneal reflex was normal, abnormal or not tested.
Cough	Site personnel were instructed to determine if the cough reflex was normal, abnormal or not tested.
Gag	Site personnel were instructed to determine if the gag reflex was normal, abnormal or not tested.
Swallow	Site personnel were instructed to determine if the swallowing reflex was normal, abnormal or not tested.