**Inclusion Criteria**

All patients with blunt head trauma above the eyebrows (not isolated to face or eyes) who do not meet any of the exclusion criteria below.

**EXCLUSION CRITERIA**

If you answer "YES" to any of these questions patient is excluded, otherwise complete form.

Complete this form:
- * Prior to reviewing CT or skull x-ray (if obtained)

Data Source: faculty physician, fellow or resident physician, NP or PA with faculty oversight.

If no patient stamp:

Patient Study ID Number

Site ID # Study ID #

Faculty physician, fellow, or resident physician, NP or PA completing data sheet:

(Please print name) Circle One: NP PA resident fellow faculty

*If resident physician, NP or PA is completing data sheet, faculty review and signature required.

Faculty signature: ___________________________  

**PLEASE COMPLETE DATA SHEET PRIOR TO REVIEWING CT OR SKULL X-RAY (IF OBTAINED)**

If you answer "YES" to any of these questions patient is excluded, otherwise complete form.

Age > 18 years? □ Yes □ No  If yes, Patient Excluded / STOP

> 24 hours since the trauma? □ Yes □ No  If yes, Patient Excluded / STOP

Brain tumor? □ Yes □ No  If yes, Patient Excluded / STOP

Penetrating head trauma (e.g. gunshot, stab)? □ Yes □ No  If yes, Patient Excluded / STOP

Pre-existing neurological disease that substantially impacts mental status or neuro exam (e.g. cerebral palsy with developmental delay or autism)? □ Yes □ No  If yes, Patient Excluded / STOP

Syncope or seizure preceded (led to) head trauma? □ Yes □ No  If yes, Patient Excluded / STOP

Patient transferred to ED with skull film, head CT, or MRI already obtained? □ Yes □ No  If yes, Patient Excluded / STOP

Substantial language barrier (i.e. only if absolutely no reasonable translation available)? □ Yes □ No  If yes, Patient Excluded / STOP

Does patient meet BOTH criteria I AND criteria II below for trivial head injury? □ Yes □ No  If yes, Patient Excluded / STOP

**Criteria I**

Sitting, standing, walking or running at ground level, then falling and hitting head against a stationary object or on ground.

**AND**

**Criteria II**

a) No signs or symptoms of head trauma or

b) Presence of a scalp laceration or abrasion alone

**Examples of trivial head injury (Patient Excluded)**

1. Child runs into edge of table and has a scalp laceration but no other symptoms or signs (meets criteria I and criteria II)

2. Child who falls from standing and hits head on ground, and has no symptoms or signs (meets criteria I and criteria II)

**Examples of non-trivial injury (Patient Included)**

1. Any fall from a height (e.g. falling from a chair, stroller, or bed) and child hit head, even if no symptoms or signs (doesn’t meet criteria I)

2. Any motor vehicle accident in which patient hit head, even if no symptoms or signs (doesn’t meet criteria I)

3. Child with a hematoma after any mechanism of head injury (doesn’t meet criteria II)

4. Child with headache or vomiting after any mechanism of head injury (doesn’t meet criteria II)

5. 3 month old who hits head by any mechanism (doesn’t meet criteria I as can’t sit, stand, walk, or run)

**NOTE: IF YOU ARE UNSURE IF IT IS A TRIVIAL HEAD INJURY OR IF YOU HAVE ANY PATIENT CONCERNS REGARDING THE HEAD, INCLUDE THE PATIENT.**

EVEN IF PATIENT EXCLUDED, PLACE THIS DATA FORM IN ED LOCK BOX WITH ONLY THE COVER SHEET COMPLETED.

REMEMBER TO PROVIDE GUARDIAN WITH INFORMATION SHEET.
I. History

1. Injury Mechanism (select only one mechanism total, from either left or right column of choices):

- Occupant in motor vehicle collision (MVC)
  - (check all that apply) □ Ejected from automobile  
  - □ Rollover  
  - □ Death in same collision  
  - □ Speed of patient's vehicle: □ Speed < 60 mph  
  - □ Speed ≥ 60 mph  
  - □ Speed unknown  
  - □ Was the patient restrained? □ Yes  
  - □ No  
  - □ Unknown

- Pedestrian struck by moving vehicle
  - □ Automobile  
  - □ Motorcycle  
  - □ Bicycle  
  - □ Other (describe):  
  - □ (Speed of moving vehicle) □ 0-5 mph (patient bumped)  
  - □ > 5 mph  
  - □ Unknown

- Bike rider struck by automobile
  - □ Was a helmet worn? □ Yes  
  - □ No  
  - □ Unknown

- Bike collision or fall from bike while riding
  - □ Was a helmet worn? □ Yes  
  - □ No  
  - □ Unknown

- Other wheeled transport crash
  - □ Motorized (describe):  
  - □ Non-Motorized (describe):  
  - □ Was a helmet worn? □ Yes  
  - □ No  
  - □ Unknown

- Other mechanism (describe):

2. Does the patient have amnesia for the event? □ No  
□ Yes  
□ Pt. preverbal (too young to describe)  
□ Pt. nonverbal (physically unable to speak)  
□ Unknown

3. History of loss of consciousness (LOC)? □ No  
□ Yes → answer 3a and 3b  
□ Suspected (but not sure) → answer 3a and 3b  
□ Unknown  

3a. If yes to LOC, report was given by: (check all that apply) □ Self report  
□ EMT report  
□ Witness  
□ Other (describe):  

3b. If history of LOC, duration of LOC: □ < 5 sec  
□ 5 sec - < 1 min  
□ 1-5 min  
□ > 5 min  
□ Unknown

4. Post-traumatic seizure? □ No  
□ Yes → answer 4a, 4b and 4c  
□ Unknown

4a. History of chronic seizure disorder? □ No  
□ Yes  
□ Unknown

4b. If post-traumatic seizure: □ Immediately on contact  
□ Within 30 min of injury  
□ > 30 min after injury  
□ Unknown

4c. If post-traumatic seizure, duration was: □ < 1 min  
□ 1 - < 5 min  
□ 5 -15 min  
□ > 15 min  
□ Unknown

5. Does parent think child is acting normally / like themself? □ No  
□ Yes  
□ Unknown
**II. Symptoms**

1. **Headache** at time of ED evaluation?
   - No → skip to 2
   - Yes → answer 1a - 1d
   - Pt. preverbal (too young to describe)
   - Pt. nonverbal (physically unable to speak)
   - Unknown

   1a. **Severity of headache:**
   - Mild (barely noticeable)
   - Moderate
   - Severe (intense)
   - Unclear

   1b. **When did headache start?**
   - Before head injury
   - Within 1 hr of event
   - 1-4 hrs after event
   - > 4 hrs after event
   - Unknown

   1c. **Location of headache:**
   - Diffuse
   - Only at site of injury
   - At occiput only and clearly due to backboard
   - Unclear
   - Other (describe): __________

   1d. History of frequent headaches prior to head injury (eg. migraine or other)?
   - No → skip to 2
   - Yes → answer 1e
   - Unknown

   1e. **If yes,** is current headache different from prior, typical headaches?
   - No → skip to 2
   - Yes
   - Unclear

2. **Vomiting** (at any time after injury)?
   - No → skip to 3
   - Yes → answer 2a, 2b and 2c
   - Unknown

   2a. **How many episodes?**
   - Once
   - Twice
   - >2 Times
   - Unknown

   2b. **When did vomiting start?**
   - Before head injury
   - Within 1 hr of event
   - 1-4 hrs after event
   - > 4 hrs after event
   - Unknown

   2c. **When was the last episode of vomiting?**
   - < 1 hr before your ED evaluation
   - 1-4 hrs before your ED evaluation
   - > 4 hrs before your ED evaluation
   - Unknown

3. **Dizziness** (at ED evaluation)?
   - No
   - Yes
   - Pt. preverbal (too young to describe)
   - Pt. nonverbal (physically unable to speak)
   - Unknown

**III. Mental Status**

1. Is your evaluation being made after patient was **intubated**?
   - No
   - Yes

2. Is your evaluation being made after patient was **pharmacologically paralyzed**?
   - No
   - Yes

3. Is your evaluation being made after patient was **pharmacologically sedated**?
   - No
   - Yes

4. **Current Glasgow Coma Score**:
   (Circle one number in each column. For infants < 2 years use the description in parentheses.)

<table>
<thead>
<tr>
<th>Eye</th>
<th>Verbal</th>
<th>Motor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Oriented (coos/babbles)</td>
<td>Follow commands (spontaneous movement)</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Verbal</td>
<td>Confused (irritable/cries)</td>
<td>Localizes pain (withdraws to touch)</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Pain</td>
<td>Inappropriate words (cries to pain)</td>
<td>Withdraws to pain</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>None</td>
<td>Incomprehensible sounds (moans)</td>
<td>Abnormal flexure posturing</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td>Abnormal extension posturing</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

5. Does patient have **other signs of altered mental status**? (check all that apply):
   - None
   - Agitated
   - Sleepy
   - Slow to respond
   - Repetitive questions in ED
   - Other (describe): __________
### IV. Examination  
(Scalp/head includes the forehead, from above the eyebrows through the back of the head to occiput)

1. **Palpable skull fracture?**
   - [ ] No
   - [ ] Yes → answer 1a
   - [ ] Unclear exam (e.g. scalp swelling impedes exam)

   1a. **If yes, does the fracture feel depressed?**
      - [ ] No
      - [ ] Yes
      - [ ] Unclear exam

2. **Anterior fontanelle bulging?**
   - [ ] No
   - [ ] Yes
   - [ ] Anterior fontanelle closed

3. **Signs of basilar skull fracture?**
   - [ ] No
   - [ ] Yes → answer 3a

   3a. **If yes, check all that are present:**
      - [ ] Hemotympanum
      - [ ] CSF rhinorrhea
      - [ ] Retroauricular ecchymoses (Battle's sign)
      - [ ] CSF otorrhea
      - [ ] Periorbital ecchymoses (Racoon eyes)

4. **Raised scalp hematoma(s) or swelling(s)?**
   - [ ] No
   - [ ] Yes → answer 4a, 4b and 4c

   4a. **If yes, location(s) involved:**
      (check all that apply)
      - [ ] Frontal
      - [ ] Parietal
      - [ ] Temporal
      - [ ] Occipital

   4b. **If yes, size (diameter) of largest hematoma or swelling:**
      - [ ] Small (<1 cm, barely palpable)
      - [ ] Medium (1-3 cm)
      - [ ] Large (>3 cm)

   4c. **If yes, quality of largest hematoma or swelling is:**
      - [ ] Boggy / depressable
      - [ ] Firm / non-depressable

5. **Any evidence of trauma**
   (including laceration, abrasion, hematoma)
   (above the clavicles) (includes neck/face/scalp)?
   - [ ] No
   - [ ] Yes → answer 5a

   5a. **If yes, what regions (check all that apply):**
      - [ ] Face
      - [ ] Neck
      - [ ] Scalp-frontal
      - [ ] Scalp-parietal
      - [ ] Scalp-occipital
      - [ ] Scalp-temporal

6. **Neurological deficit**
   (other than mental status)?
   - [ ] No
   - [ ] Yes → answer 6a
   - [ ] Unable to assess

   6a. **If yes, (check all that apply):**
      - [ ] Motor
      - [ ] Reflexes
      - [ ] Sensory
      - [ ] Other deficits (e.g. cerebellar, gait; please describe):
      - [ ] Cranial Nerve (includes pupil reactivity)

7. **Clinical evidence of other (non-head) substantial injuries:**
   (includes but not limited to fractures, intra-abdominal injuries, intra-thoracic injuries and lacerations requiring operating room repair.)
   - [ ] No
   - [ ] Yes → answer 7a

   7a. **Injury to (check all that apply):**
      - [ ] Extremity
      - [ ] Intra-abdominal
      - [ ] C-spine
      - [ ] Pelvis
      - [ ] Chest/back/flank
      - [ ] Laceration requiring repair in the operating room
      - [ ] Other (describe):
      - [ ] Unable to fully assess

8. **Clinical suspicion for alcohol or drug intoxication**
   (not by laboratory testing)?
   - [ ] No
   - [ ] Yes
T. Clinical Decision Making (If resident, NP or PA is completing this form, please confer with attending/fellow)

1. Is a head CT, skull x-ray or head MRI being ordered or obtained? Yes No

2. Suspicion for the presence of TBI on CT regardless of whether a CT is being ordered or obtained (intracranial hematoma, cerebral contusion, cerebral edema or depressed skull fracture; excludes isolated linear skull fracture)
   - <1%
   - 1-5%
   - 6-10%
   - 11-50%
   - >50%

3. Suspicion for TBI in need of acute intervention regardless of whether a CT is being ordered or obtained (neurosurgical intervention, elevation of depressed skull fracture, intubation for TBI > 24 hrs, hospitalization for TBI ≥ 2 nights)
   - <1%
   - 1-5%
   - 6-10%
   - 11-50%
   - >50%

4. Answer only if CT ordered or obtained: check those indications that are most important in influencing your decision to obtain a head CT for this child
   - Young age
   - Mechanism
   - LOC
   - Amnesia
   - Seizure
   - Headache
   - Vomiting
   - Decreased mental status
   - Clinical evidence of skull fracture
   - Scalp hematoma
   - Neurological deficit (other than mental status)
   - Skull fracture on x-ray
   - Trauma team request
   - Parental anxiety / request
   - Other (describe):

5. Was patient given or will patient be given pharmacological sedation for head CT scan? Yes No
   5a. Why was sedation used or why is sedation going to be used for head CT (check all that apply)?
   - Yes
   - No CT
   - Agitation / Inability to hold still
   - Young age
   - CT tech request
   - Other (describe):

6. Was the data sheet completed before head CT, skull x-ray, or MRI reviewed (if obtained)? Yes No
   - No neuroimaging obtained

VI. General Information

Best Phone Number to Reach Guardian/Parent

Alternate Phone Number

Date of Injury

Date of ED Evaluation

Date of Birth

Guardian Principal Language

Race (check all that apply, using your best assessment)

Ethnicity

Gender

Male

Female

White

Black

Asian

American Indian/Alaskan Native

Pacific Islander

Unknown

Other
### VII. Course in ED

(to be completed only for those patients for whom decision to obtain or not obtain CT was made after a period of observation after your initial ED evaluation.)

1. **Was the patient observed in the ED after your initial ED evaluation to determine whether to obtain head CT?**

   - [ ] No → skip to section VIII  
   - [ ] Yes → answer 2 - 4

2. Prior to CT or if no CT obtained, the **patient’s headache:**

   - [ ] Patient never had headache
   - [ ] Resolved without any analgesia
   - [ ] Resolved with analgesia
   - [ ] Improved (but did not resolve)
   - [ ] Stayed the same
   - [ ] Worsened
   - [ ] Can't assess - Pt preverbal or nonverbal
   - [ ] Did not reassess

3. Prior to CT or if no CT obtained, the **patient’s vomiting:**

   - [ ] Patient never vomited
   - [ ] Resolved without meds
   - [ ] Resolved with meds
   - [ ] Continued (stayed the same)
   - [ ] Worsened
   - [ ] Did not reassess

4. Prior to CT or if no CT obtained, the **patient’s mental status/GCS:**

   - [ ] Patient never had GCS < 15
   - [ ] Improved to normal (GCS 15)
   - [ ] Improved but not to normal
   - [ ] Stayed the same
   - [ ] Worsened
   - [ ] Did not reassess

### VIII. ED Disposition

- [ ] Home
- [ ] Admit - general inpatient
- [ ] OR
- [ ] Admit short-stay (< 24 hour) / observation unit
- [ ] ICU
- [ ] Death in ED
- [ ] Transferred to Name of hospital
- [ ] AMA
- [ ] Other (Describe):

**You are now done - please place form in locked box now.**

THANK YOU!!!
I. ED Imaging (This section is only to be completed for patients for whom head CT, skull x-ray or head MRI was performed during ED visit.)

1. Head CT obtained during the patient's ED visit?  ☐ No → skip to 2  ☐ Yes → answer 1a - 1e

1a. Date and Time of Initial ED Head CT: (attach a copy of CT interpretation to data sheet)

Date of Initial ED Head CT

☐  □  /  □  □  /  □  □  Month  Day  Year

Time of Initial ED Head CT

(24 hour clock, midnight is 00:00)

☐  □  :  □  □  Hour  Minute

1b. Initial ED Head CT Findings (check all that apply)

☐ Normal (No intracranial findings or skull fractures: Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → skip to 2

☐ Abnormal (Includes intracranial findings or skull fractures: Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → answer 1c, 1d, 1e

☐ Limited quality (radiologist dictation states CT is of limited quality due to motion or other artifact)

☐ Not interpretable (radiologist dictation states CT is not interpretable due to motion or other artifact)

1c. Any traumatic findings? (check all that apply)

☐ No

☐ Cerebellar hemorrhage  ☐ Diastasis of the skull  ☐ Pneumocephalus

☐ Cerebral contusion  ☐ Epidural hematoma (EDH)  ☐ Skull fracture

☐ Cerebral edema  ☐ Extra-axial hematoma  ☐ Subarachnoid hemorrhage (SAH)

☐ Cerebral hemorrhage / Intracerebral hematoma  ☐ Intraventricular hemorrhage (IVH)  ☐ Subdural hematoma (SDH)

☐ Cerebral edema  ☐ Midline shift / Shift of brain structures  ☐ Traumatic infarction

☐ Other traumatic finding (describe):

☐ Radiologist's finding(s) were equivocal (e.g. described as "possible", "questionable", "unclear") (need site PI to clarify with radiologist)

1d. Any non-traumatic finding(s) on head CT? (does not include sinusitis or fluid in sinuses)  ☐ No  ☐ Yes → please summarize below

1e. Skull fracture present on head CT?  ☐ No → skip to 2  ☐ Yes → answer 1f  ☐ Unknown

1f. If fracture: (check all that apply)  ☐ Linear  ☐ Complex  ☐ Depressed → answer 1g and 1h  ☐ Basilar

☐ Other (describe):

1g. If fracture depressed, was the inner table depressed by at least the thickness of the entire bone?

☐ No  ☐ Yes  ☐ Not stated

1h. If fracture depressed, how many millimeters was the depression?  ☐  □  □  mm  ☐ Not stated

Note: If head CT positive (including a skull fracture), type radiologist "final impressions" verbatim into database.
2. Was a skull x-ray performed while patient in the ED?  
(attach copy of interpretation if performed)

☐ No → skip to 3  ☐ Yes → answer 2a

2a. Fracture on skull x-ray?  
☐ No → skip to 3  ☐ Yes → answer 2b  ☐ Equivocal findings  
(need site PI to clarify with radiologist)

2b. If fracture:  
☐ Linear  ☐ Complex  ☐ Depressed → answer 2c and 2d  ☐ Basilar

☐ Other (describe): ________________________________

2c. If fracture depressed, was the inner table depressed by at least the thickness of the entire bone?

☐ No  ☐ Yes  ☐ Not stated

2d. If fracture depressed, how many millimeters was the depression?  
☐ mm  ☐ Not stated

Note: If skull x-ray positive type radiologist "final impression" verbatim into database.

3. Was a head MRI performed while patient in the ED?  
☐ No → skip to section II  ☐ Yes → answer 3a

3a. ED MRI Findings (check all that apply)

☐ Normal  
(No intracranial findings or skull fractures: Note, head MRI with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → skip to section II

☐ Abnormal  
(Includes intracranial findings or skull fractures: Note, head MRI with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → answer 3b, 3c

☐ Limited quality  
(radiologist dictation states MRI is of limited quality due to motion or other artifact)

☐ Not interpretable  
(radiologist dictation states MRI is not interpretable due to motion or other artifact)

3b. Any traumatic findings? (check all that apply)

☐ No

☐ Cerebellar hemorrhage  ☐ Diastasis of the skull  ☐ Pneumocephalus

☐ Cerebral contusion  ☐ Epidural hematoma (EDH)  ☐ Skull fracture

☐ Cerebral edema  ☐ Extra-axial hematoma  ☐ Subarachnoid hemorrhage (SAH)

☐ Cerebral hemorrhage / Intracerebral hematoma  ☐ Intraventricular hemorrhage (IVH)  ☐ Subdural hematoma (SDH)

☐ Other traumatic finding (describe): ________________________________

3c. Any non-traumatic finding(s) on head MRI? (not including sinusitis or fluid in sinuses)  
☐ No  ☐ Yes → please summarize below

Note: If head MRI positive (including a skull fracture), type radiologist "final impressions" verbatim into database.
II. Imaging While Hospitalized (only to be completed for patients hospitalized from ED visit)

1. Was patient hospitalized after initial ED visit (or initially discharged, but subsequently hospitalized as determined by follow-up survey, trauma registry, CQI review or morgue review)?

- [ ] No → skip to section III  
- [ ] Yes → answer 2

2. Was a second head CT obtained after the initial head CT? (If yes, attach a copy of the second CT interpretation to this data sheet)

- [ ] No → skip to 4  
- [ ] Yes → answer 2a and 2b

(Note to RA: Also use this section: a) for the rare hospitalized patient who did not receive an ED head CT, but whose first head CT was as an inpatient. Indicate this occurred by checking the following box.  
  b) for the rare patient who received 2nd ED head CT. Indicate this occurred by checking the following box.  

2a. Date and Time of second CT:

<table>
<thead>
<tr>
<th>Date of Second CT</th>
<th>Time of Second CT (24 hour clock, Midnight 00:00)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month / Day / Year</td>
<td>Hour : Minute</td>
</tr>
</tbody>
</table>

2b. Second Head CT Findings (check all that apply)

- [ ] Normal (No intracranial findings or skull fractures: Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → skip to 3

- [ ] Abnormal (Includes intracranial findings or skull fractures: Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → answer 2c

- [ ] Limited quality (radiologist dictation states CT is of limited quality due to motion or other artifact)

- [ ] Not interpretable (radiologist dictation states CT is not interpretable due to motion or other artifact)

2c. Any traumatic findings? (check all that apply)

- [ ] No → skip to 3

- [ ] Cerebellar hemorrhage

- [ ] Cerebral contusion

- [ ] Cerebral edema

- [ ] Cerebral hemorrhage / Intracerebral hematoma

- [ ] Cerebral edema

- [ ] Hemorrhage / Intracerebral hematoma

- [ ] Diastasis of the skull

- [ ] Epidural hematoma (EDH)

- [ ] Extra-axial hematoma

- [ ] Intraventricular hemorrhage (IVH)

- [ ] Midline shift / Shift of brain structures

- [ ] No other traumatic finding (describe): ________________________________

- [ ] Pneumocephalus

- [ ] Skull fracture

- [ ] Subarachnoid hemorrhage (SAH)

- [ ] Subdural hematoma (SDH)

- [ ] Traumatic infarction

2d. Does radiologist state that, compared to first CT, traumatic findings on second CT (describe):

- [ ] Decreased (describe): ________________________________

- [ ] Increased (describe): ________________________________

- [ ] Did not change (describe): ________________________________

- [ ] New traumatic findings (describe): ________________________________

- [ ] Does not say
3. Was a third head CT obtained? *(If yes, attach a copy of the third CT interpretation to this data sheet)*

- [ ] No  →  skip to 4
- [x] Yes  →  answer 3a and 3b

3a. Date and Time of third CT:

<table>
<thead>
<tr>
<th>Date of Third CT</th>
<th>Time of Third CT <em>(24 hour clock, Midnight 00:00)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Month / Day / Year</td>
<td>Hour : Minute</td>
</tr>
</tbody>
</table>

3b. **Third Head CT Findings** *(check all that apply)*

- [ ] Normal *(No intracranial findings or skull fractures: Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.)* → skip to 4
- [ ] Abnormal *(Includes intracranial findings or skull fractures: Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.)* → answer 3c
- [ ] Limited quality *(radiologist dictation states CT is of limited quality due to motion or other artifact)*
- [ ] Not interpretable *(radiologist dictation states CT is not interpretable due to motion or other artifact)*

3c. Any traumatic findings? *(check all that apply)*

- [ ] No  →  skip to 4
- [ ] Diastasis of the skull
- [ ] Pneumocephalus
- [ ] Cerebellar hemorrhage
- [ ] Epidural hematoma (EDH)
- [ ] Skull fracture
- [ ] Cerebral contusion
- [ ] Extra-axial hematoma
- [ ] Subarachnoid hemorrhage (SAH)
- [ ] Cerebral edema
- [ ] Intraventricular hemorrhage (IVH)
- [ ] Subdural hematoma (SDH)
- [ ] Cerebral hemorrhage / Intracerebral hematoma
- [ ] Midline shift / Shift of brain structures
- [ ] Traumatic infarction
- [ ] Other traumatic finding *(describe):*

3d. Does radiologist state that, compared to second CT, traumatic findings on third CT *(describe):*

- [ ] Decreased *(describe):*
- [ ] Increased *(describe):*
- [ ] Did not change *(describe):*
- [ ] New traumatic findings *(describe):*
- [ ] Does not say

4. Was a head MRI performed while patient hospitalized? *(If yes, attach copy of interpretation)*

- [ ] No  →  form complete
- [x] Yes  →  answer 4a and 4b

4a. Date and Time of MRI:

<table>
<thead>
<tr>
<th>Date of MRI</th>
<th>Time of MRI <em>(24 hour clock, Midnight 00:00)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Month / Day / Year</td>
<td>Hour : Minute</td>
</tr>
</tbody>
</table>

4b. **MRI Findings** *(check all that apply)*

- [ ] Normal *(No intracranial findings or skull fractures: Note, head MRI with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.)* → form complete
- [ ] Abnormal *(Includes intracranial findings or skull fractures: Note, head MRI with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.)* → answer 4c
- [ ] Limited quality *(radiologist dictation states MRI is of limited quality due to motion or other artifact)*
- [ ] Not interpretable *(radiologist dictation states MRI is not interpretable due to motion or other artifact)*

4c. Any traumatic findings? *(check all that apply)*

- [ ] No
- [ ] Diastasis of the skull
- [ ] Pneumocephalus
- [ ] Cerebellar hemorrhage
- [ ] Epidural hematoma (EDH)
- [ ] Skull fracture
- [ ] Cerebral contusion
- [ ] Extra-axial hematoma
- [ ] Subarachnoid hemorrhage (SAH)
- [ ] Cerebral edema
- [ ] Intraventricular hemorrhage (IVH)
- [ ] Subdural hematoma (SDH)
- [ ] Cerebral hemorrhage / Intracerebral hematoma
- [ ] Midline shift / Shift of brain structures
- [ ] Traumatic infarction
- [ ] Other traumatic finding *(describe):*
III. Imaging as Outpatient (This section is only to be completed on patients discharged from ED, for whom follow-up survey, trauma registry, CQI review or morgue review, indicates that patient returned to a health care facility and a head CT, skull x-ray or head MRI was performed.)

1. Was patient discharged to home from ED, than returned to any facility and received a head CT, skull x-ray, or head MRI?
   - No → form complete
   - Yes → answer 2

2. Head CT obtained?  
   - No → skip to 3
   - Yes → answer 2a, 2b

   2a. Date and Time of Head CT: (attach a copy of CT interpretation to data sheet)

   **Date of Head CT**
   - Month / Day / Year

   **Time of Head CT**
   - Hour : Minute

   **2b. Head CT Findings** (check all that apply)
   - Normal (No intracranial findings or skull fractures; Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → skip to 3
   - Abnormal (Includes intracranial findings or skull fractures; Note, head CT with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → answer 2c - 2e
   - Limited quality (radiologist dictation states CT is of limited quality due to motion or other artifact)
   - Not interpretable (radiologist dictation states CT is not interpretable due to motion or other artifact)

2c. Any traumatic findings? (check all that apply)
   - No
   - Cerebellar hemorrhage
   - Cerebral contusion
   - Cerebral edema
   - Cerebral hemorrhage / Intracerebral hematoma
   - Diastasis of the skull
   - Epideral hematoma (EDH)
   - Extra-axial hematoma
   - Intraventricular hemorrhage (IVH)
   - Midline shift / Shift of brain structures
   - Pneumocephalus
   - Skull fracture
   - Subarachnoid hemorrhage (SAH)
   - Subdural hematoma (SDH)
   - Traumatic infarction
   - Subarachnoid hemorrhage (SAH)
   - Other traumatic finding (describe):
   - Radiologist's finding(s) were equivocal (e.g. described as "possible", "questionable", "unclear") (need site PI to clarify with radiologist)

2d. Any non-traumatic findings on head CT? (does not include sinusitis or fluid in sinuses)  
   - No
   - Yes → please summarize below

2e. Skull fracture present on head CT?  
   - No → skip to 3
   - Yes → answer 2f
   - Unknown

2f. If fracture: (check all that apply)
   - Linear
   - Complex
   - Depressed → answer 2g and 2h
   - Basilar
   - Other (describe):

2g. If fracture depressed, was the inner table depressed by at least the thickness of the entire bone?
   - No
   - Yes
   - Not stated

2h. If fracture depressed, how many millimeters was the depression?  
   - mm
   - Not stated

Note: If head CT positive (including a skull fracture), type radiologist "final impressions" verbatim into database.
3. Was a skull x-ray performed at the return visit? (attach copy of interpretation if performed)
   □ No → skip to 4  □ Yes → answer 3a

3a. Fracture on skull x-ray?
   □ No → skip to 4  □ Yes → answer 3b  □ Equivocal findings (need site PI to clarify with radiologist)

3b. If fracture: □ Linear  □ Complex  □ Depressed → answer 3c and 3d  □ Basilar
   □ Other (describe):

3c. If fracture depressed, was the inner table depressed by at least the thickness of the entire bone?
   □ No  □ Yes  □ Not stated

3d. If fracture depressed, how many millimeters was the depression? □□□□ mm  □ Not stated

Note: If Skull x-ray positive type radiologist "final impression" verbatim into database.

4. Was a head MRI performed at the return visit? □ No → form complete  □ Yes → answer 4a

4a. MRI Findings (check all that apply)
   □ Normal (No intracranial findings or skull fractures: Note, head MRI with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → form complete
   □ Abnormal (Includes intracranial findings or skull fractures: Note, head MRI with isolated scalp injuries, e.g. scalp hematoma, is considered normal. Also, sinusitis or fluid in sinuses is considered normal.) → answer 4b, 4c
   □ Limited quality (radiologist dictation states MRI is of limited quality due to motion or other artifact)
   □ Not interpretable (radiologist dictation states MRI is not interpretable due to motion or other artifact)

4b. Any traumatic findings? (does not include sinusitis or fluid in sinuses) (check all that apply)
   □ No  □ Cerebellar hemorrhage  □ Diastasis of the skull  □ Pneumocephalus
   □ Cerebral contusion  □ Epidural hematoma (EDH)  □ Skull fracture
   □ Cerebral edema  □ Extra-axial hematoma  □ Subarachnoid hemorrhage (SAH)
   □ Cerebral hemorrhage / Intracerebral hematoma  □ Intraventricular hemorrhage (IVH)  □ Subdural hematoma (SDH)
   □ Midline shift / Shift of brain structures  □ Traumatic infarction
   □ Other traumatic finding (describe):

4c. Any non-traumatic finding(s) on head MRI? □ No  □ Yes → please summarize below

Note: If head MRI positive (including a skull fracture), type radiologist "final impressions" verbatim into database.

THANK YOU!!!  FORM IS NOW COMPLETE
1. Neurosurgical procedure performed? □ No → skip to 2 □ Yes → answer 1a
   1a. If yes, check all that apply:
      □ Dura repair for CSF leak  □ Intracranial pressure (ICP) monitor  □ Tissue debridement
      □ Fracture elevation  □ Lobectomy  □ Ventriculostomy
      □ Hematoma drained  □ Other (describe): ____________________________

2. Patient intubated? □ No → skip to 3 □ Yes → answer 2a and 2b
   2a. If intubated, was the intubation > 24 hours? □ No □ Yes □ Unsure → ask site PI
   2b. If intubated > 24 hrs, was the intubation for head trauma? □ No □ Yes □ Unsure → ask site PI

3. Hospitalized two or more nights (From ED triage time until the time of discharge from hospital, with night definition before 00:00)? □ No □ Yes → answer 3a
   3a. Hospitalized > 2 nights for head injury? □ No □ Yes □ Unsure → ask site PI
      (If site PI unsure, refer to Nodal Champion for review.)

4. Death in hospital? □ No □ Yes → answer 4a
   4a. If yes, death due to TBI? □ No □ Yes □ Unsure → ask site PI
      (If site PI unsure, refer to Nodal Champion for review.)

5. Other documented substantial injuries (check all that apply):
   (includes but not limited to fractures, intra-abdominal injuries, and intra-thoracic injuries)
   □ None (isolated head injury)  □ Extremity  □ CSpine / spinal Cord  □ Chest/back/flank  □ Intra-abdominal  □ Pelvis
   □ Other (describe): ____________________________

6. Answer only if patient had post traumatic seizure (indicated on CRF 1, pg. 2, question #4), otherwise skip to 7.
   If post traumatic seizure, did patient have another seizure within first 7 days of hospitalization? □ No □ Yes

7. Discharged/Transferred to: (check all that apply):
   □ Home  □ Rehab/chronic care facility  □ Another acute care facility  □ Patient died
   Note: If transferred to another acute care facility, you will need to obtain and review the medical record from the other acute care facility to determine outcomes.

   Date of ED Triage
   Month / Day / Year  □ Not documented

   Time of ED Triage
   Hour : Minute  □ Not documented

   Date of Hospital Discharge or Transfer
   Month / Day / Year  □ Not documented

   Time of Hospital Discharge or Transfer
   Hour : Minute  □ Not documented

   Date of Death (if patient died)
   Month / Day / Year  □ Not documented

   Time of Death (if patient died)
   Hour : Minute  □ Not documented

8. ICD-9 codes upon discharge (If ICD-9 codes not available, list top 10 discharge diagnoses)
   1. ____________________________  6. ____________________________
   2. ____________________________  7. ____________________________
   3. ____________________________  8. ____________________________
   4. ____________________________  9. ____________________________
   5. ____________________________  10. ____________________________
Complete this form:
* From chart review of a random 5% of hospitalized patients
Data Source: Medical record, completed by HEDA PI

Evaluator Name: ____________________________
(Please print name)

Date of ED Evaluation

[ ] [ ] [ ]
Month Day Year

Date of Form Completion

[ ] [ ] [ ]
Month Day Year

For Hospitalized Patients Only:

1. Neurosurgical procedure performed?  □ No → skip to 2  □ Yes → answer 1a

   1a. If yes, check all that apply:
   □ Dura repair for CSF leak  □ Intracranial pressure (ICP) monitor  □ Tissue debridement
   □ Fracture elevation  □ Lobectomy  □ Ventriculostomy
   □ Hematoma drained  □ Other (describe): ____________________________

2. Patient intubated?  □ No → skip to 3  □ Yes → answer 2a and 2b

   2a. If intubated, was the intubation > 24 hours?  □ No  □ Yes → answer 2b

   2b. If intubated > 24 hrs, was the intubation for head trauma?  □ No  □ Yes  □ Unsure

3. Hospitalized two or more nights (From ED triage time until the time of discharge from hospital, with night definition before 00:00)?

   □ No  □ Yes → answer 3a

   3a. Hospitalized ≥ 2 nights for head injury?  □ No  □ Yes  □ Unsure

4. Death in hospital?  □ No  □ Yes → answer 4a

   4a. If yes, death due to TBI?  □ No  □ Yes  □ Unsure