

Work Flow for Acute Blunt Traumatic Brain Injury

1.) Assign a BIG Classification:

- a. Make sure to assess the Three clinical parameters
 - i. NOTE: A patient cannot be a BIG1 or BIG2 if they are on anticoagulation
 1. If CAMP cannot be determined via history, base on TEG and coag panel
 - ii. NOTE: A patient cannot be a BIG1 or BIG2 if they have an abnormal neuro exam
 1. This is BEST GCS, not necessarily GCS on presentation
- b. Radiographic: Ensure measurements/exact verbiage are from FINAL Head CT scan. If these measurements are not in the report, call radiology and ensure measurements/exact verbiage is dictated.

⊕ Clinical Practice Guideline:

	BIG 1	BIG 2	BIG 3	C L I N I C A L
Neuro Exam (Abnormal = Best GCS <15 at time of classification, or focal deficit)	Normal	Normal	Abnormal	
Intoxication (EtOH > 80 mg/dl, Suspicion of any non-EtOH substance abuse)	No	No/Yes	No/Yes	
Coagulopathy [Pharmacological (anticoagulation, antiplatelets), Non-pharmacological (Abnormal TEG, cirrhosis, INR>1.4, thrombocytopenia <100)]	No	No	Yes	
Skull fracture	No	Non-displaced	Displaced	
Subdural Hematoma	≤4mm	5-7mm	≥8mm	
Epidural Hematoma	≤4mm	5-7mm	≥8mm	
Intraparenchymal Hemorrhage	≤4mm and 1 location	5-7mm and/or 2 locations	≥8mm and/or multiple locations	
Subarachnoid Hemorrhage	"Trace" = ≤3 sulci	"Localized" = Single hemisphere	"Scattered" Bi-hemispheric	
Intraventricular Hemorrhage	No	No	Yes	
Midline Shift	No	No	Yes	

All measurements/exact verbiage according to FINAL HCT

Patients must meet all criteria for categorization into BIG 1 or BIG 2. Failure to meet even 1 criterion (in BIG 1 or BIG 2) categorizes the patient into the BIG 3 category

Repeat HCT	No	No	Yes @6 Hours
Neurosurgical Consultation	No	No	Yes
Hospitalization	6 hour observation	Yes, 24 hour observation	Yes
Neurocheck Frequency	Q2	Q4	Q1 (until otherwise specified by NSG)
Discharge Criteria	GCS 15 (or baseline), Neuro Intact	GCS 15 (or baseline), Neuro Intact	NA

Exclusion: All transfers with a TBI get a repeat HCT on arrival regardless of prior BIG score. Based on HCT obtained at UAB, follow above guidelines. These patients will also require an over-read of film from outside hospital.

Any patient with a change in neurologic examination will require a STAT HCT and Neurosurgical Consultation

Note: Open Skull Fractures

Should receive antibiotic ppx with rocephin

- Open, Non-displaced skull fracture = BIG 2. This would fall under the management of trauma.
- Open, displaced skull fractures = BIG3 = NSG consult.
 - In the absence of CSF leak or dura breach (as determined by NSG) if our NSG team recommends closure by the trauma team, this is appropriate.
 - In the setting of CSF or dural breach, we will anticipate that this will be managed by neurosurgery.

Appropriate closure will consist of 1L of irrigation and closure within 6 hours of injury.

2.) Follow Therapeutic Plan

- a. BIG 1 – no repeat head CT, observe for 6 hours in ER with Q2 hour NC for change in neurologic exam (trauma eval only), no admission required
- b. BIG 2 – no repeat head CT, trauma admission for 24 hour observation with Q4hr neuro checks (trauma eval only)
- c. BIG 3 – Neurosurgical consultation, repeat head CT at their discretion, neuro checks at their discretion. Pts receive Q1 neurochecks in bay until otherwise specified by NSG.
 - i. Note: Patients who are intubated or whose neurological exam cannot be reliably assessed during the entire observation period are upgraded to BIG 3.
- d. **Exclusion:**
 - i. All transfers with TBI get a repeat HCT on arrival regardless of prior BIG score. Based on HCT obtained at UAB, follow above guidelines.
 - 1. These patients will also require an order placed for over-read of film from outside hospital
- e. Any questions regarding BIG classification, err on the side of neurosurgical consultation. Please call/text/email Sabrina Goddard [C: 918-346-0960, sdgoddard@uabmc.edu] with any of these questionable patients.

3.) Orders/Documentation

- a. Appropriately document BIG criteria and score on H&P
 - i. This is a mandatory section on the H&P (see below)
- b. Ensure TBI in addition to BIG score is listed on the daily list (under injuries)
- c. If transfer, ensure over read order placed
- d. Ensure that order is placed for neurochecks and associated frequency
- e. If neurosurgery is consulted, please ensure order for consultation is placed
 - i. Document in H&P time of consultation (time called to resident) and verbally tell trauma RN whenever NSG was called (for their documentation purposes)
 - ii. RNs to document arrival time
- f. For BIG 1 DC'd from ER and BIG 2 DC'd from floor:
 - i. RNs will perform neurochecks, however, **it is expected that a provider perform the final neurocheck prior to discharge to ensure that the patient is still appropriate for discharge.**
 - ii. Patients will be seen by SRC therapy department for cognitive and vestibular evaluation. They will also triage these patients to see if they would be appropriate for referral to be seen by providers in the brain injury clinic.
 - iii. In order to discharge, post-discharge orders document must be entered, Clinic phone number provided [Therapy Access Center 975-4922], and educational materials provided. See DC instructions below

H&P

* Assessment <Hide Structure> <Use Free Text>	
* Assessment and Therapy	
Diagnosis	Dx Code Search / All diagnoses must be codes 800-900 to associate with trauma / INJURY (repeats)
* Traumatic Brain Injury	
Is the patient being treated for a Traumatic Brain Injury	Yes* / No

2. BIG 1:

BIG Score

BIG 1: Normal Neuro Exam; No Intoxication; No Coagulopathy; No Skull Fracture; Subdural Hematoma less than/equal to 4mm; Epidural Hematoma less than/equal to 4mm; Intraparenchymal Hemorrhage less than/equal to 4mm, 1 location; Subarachnoid Hematoma "Trace"= less than/equal to 3 sulci; No Intraventricular Hemorrhage; No Midline shift.

3. Big 2:

BIG Score

BIG 2: Normal Neuro Exam; Intoxication No/Yes; No Coagulopathy; Non-displaced Skull Fracture; Subdural Hematoma 5-7mm; Epidural Hematoma 5-7mm; Intraparenchymal Hemorrhage 5-7mm, and/or 2 locations; Subarachnoid Hemorrhage "Localized"= single hemisphere; No Intraventricular Hemorrhage; No Midline Shift.

4. Big 3:

BIG Score

BIG 3: Abnormal Neuro Exam; Intoxication No/Yes; Coagulopathy; Displaced Skull Fracture; Subdural Hematoma greater than/equal to 8mm; Epidural Hematoma greater than/equal to 8mm; Intraparenchymal Hemorrhage greater than/equal to 8mm, and/or multiple locations; Subarachnoid Hemorrhage "Scattered"Bi-hemispheric; Yes Intraventricular Hemorrhage; Yes Midline Shift.

Discharge from ER

Discharge Orders

Post Discharge Orders Workflow

From patient's chart, choose Documentation + Add

In the Search Field of Encounter Pathway type in Post Discharge. Choose Post Discharge Orders (Primary Team)

Name	Description
ID Consult Post Discharge Orders	UAB Infectious Disease Consult Post Discharge Orders
Post Discharge Clinic	UAB Post Discharge Clinic
Post Discharge Orders (Primary Team)	UAB Post Discharge Orders (Primary Team)

Complete pertinent documentation in note for Diagnosis, General Information and consults.

In the Orders section, choose Outpatient Therapy Orders.

Circle all three services – outpatient therapy services will evaluate the patient for all services to formulate plan. Note: All services may not be needed by every patient, but order is available if needed.

Evaluate and treat = Yes

If you desire for the patient to receive services at UAB – Preferred outpatient therapy facility should = UAB Hospital OP Therapy.

Note – you do not need to fill out visits per week or duration.

Outpatient Therapy Orders

Evaluate and treat: Yes

Visits Per Week: 1 / 2 / 3 / 4 / 5 / OTHER

Duration in Weeks: 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12 / OTHER

Preferred outpatient therapy facility for OT/PT/STP: UAB Hospital OP Therapy / UAB Hospital OP Therapy Rapid Access Stroke / UAB Hospital OP Therapy Rapid Access SCI

Preferred outpatient therapy facility for Low Vision Rehab: UAB Hospital OP Therapy

NOTE: When the facility UAB Hospital OP Therapy is selected, the system will notify the scheduling team who will contact the patient.

Once the location of UAB Hospital OP Therapy is chosen, the system automatically sends a message to the scheduling pool in IMPACT for the outpatient therapy scheduling staff to call the patient. No additional message is needed.

Post Discharge Orders Workflow

From: SYSTEM, SYSTEM

Sent: 8/18/2022 09:27:14 CDT

Subject: Post DC UAB Hospital OP Therapy Facility

To: IPR to OP Continuum of Care (Gersh, Crystal BS, CMA (AAMA))

Cc:

<Add Text>

Patient Name: [REDACTED]
Patient DOB: [REDACTED]
MRN: [REDACTED]
FIN: [REDACTED]

UAB Hospital OP Therapy

Once evaluation is complete, treating therapist will communicate with PM&R provider for potential clinic follow up.

Educational materials

1. Select Depart
2. Select Exit/Patient Care education

Templates: Depart_ED_English

Medication Reconciliation	
Medications	
Follow-up Date	
ExitCare/Patient Education	
more...	
Problems and Diagnosis	
FirstNet Set Events	
EMTALA And Nursing Depart Summary	
Preoperative/Preprocedure Checklist	
Chart Printing	
IV Stop Times	
<input checked="" type="checkbox"/> Lactated Ringers Injection intraven	
<input checked="" type="checkbox"/> levETIRAcetam (levETIRAcetam IV	

3. Ensure that “all” is selected, and type “Concussion Recovery Custom”

Instructions Follow Up

Search: Concussion Recovery Custom starts with Language: English

Suggested Departmental Personal All Custom

Patient Education
Cardiovascular
Caringiving
Custom
Dentistry
Dermatology

Concussion Recovery (Custom) (Custom)

Selected Instructions

Arial 10

Concussion Recovery

July 2020
TBI Factsheet

www.msktc.org/tbi/factsheets

This fact sheet is about concussions. It reviews symptoms, recovery, and long-term outcomes. It also talks about where to get support after a concussion.

The Traumatic Brain Injury Model System is sponsored by the National Institute of Disability, Independent Living, and Rehabilitation Research, U.S. Department of Health and Human Services' Administration for Community Living. (See <http://www.msktc.org/tbi/model-system-centers> for more information).

What is a concussion?

A concussion is a mild traumatic brain injury (TBI) caused by a blow to the head which causes the head and brain to move rapidly back and forth. This can happen due to a car or bike crash, a fall, an assault, or a sports injury. In most cases, there are no lasting