

# Head Trauma

## Section 1: Case Summary

<b>Scenario Title:</b>	<b>Head Trauma</b>
Keywords:	Head Trauma. Raised ICP. Femur Fracture.
Brief Description of Case:	Young healthy patient falls from height and sustains a serious head injury. His LOC is decreased and he will require intubation. There is evidence of raised ICP requiring management. He also has a femur fracture that requires traction to control ongoing hemorrhage from long bone fracture

Goals and Objectives	
Educational Goal:	Management of Major Head Injury
Objectives: (Medical and CRM)	<ul style="list-style-type: none"> <li>-Quickly assess and address trauma patient's ABC's</li> <li>-Consider preparation, equipment, drugs required for traumas and airway management</li> <li>-Consider and plan (verbally or physically) for complications of trauma including possible hemodynamic compromise, raised intracranial pressure</li> <li>-Demonstrate role clarity, delegation of roles and responsibilities at the initiation of the scenario.</li> <li>-Demonstrate effective communication during the scenario: constructing clear messages, closed loop communication, shared mental model</li> </ul>
EPAs Assessed:	

Learners, Setting and Personnel			
Target Learners:	<input type="checkbox"/> Junior Learners	<input checked="" type="checkbox"/> Senior Learners	<input type="checkbox"/> Staff
	<input type="checkbox"/> Physicians	<input type="checkbox"/> Nurses	<input type="checkbox"/> RTs
	<input type="checkbox"/> Inter-professional		
	<input type="checkbox"/> Other Learners:		
Location:	<input checked="" type="checkbox"/> Sim Lab	<input checked="" type="checkbox"/> In Situ	<input type="checkbox"/> Other:
Recommended Number of Facilitators:	Instructors: 1		
	Confederates: None		
	Sim Techs: 1		

Scenario Development	
Date of Development:	2018
Scenario Developer(s):	Drew Delany
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Revised By:	Drew Delany
Version Number:	2



# Simulation Scenario Template

## Section 5: Scenario Progression

Scenario States, Modifiers and Triggers			
Patient State/Vitals	Patient Status	Learner Actions, Modifiers & Triggers to Move to Next State	Facilitator Notes
<b>1. Baseline State</b> Rhythm: Sinus HR: 105 BP: 90/60 RR: 16 O <sub>2</sub> SAT: 100%NRB T: 37°C GCS: 9 (E2V2M5)	<i>Patient decreased level of consciousness.</i>  <i>Moaning.</i>  <i>Looks "shocky"</i>	<u>Expected Learner Actions</u> <input type="checkbox"/> Identify Team Leader <input type="checkbox"/> Identify / Delegate Roles <input type="checkbox"/> Primary Assessment ABCs <input type="checkbox"/> Call for stat blood or consider small IVF bolus <input type="checkbox"/> Perform EFAST exam ( <i>all normal</i> ) <input type="checkbox"/> Identify right thigh as potential source of hemodynamic instability	<u>Modifiers</u> <i>Changes to patient condition based on learner action</i>  <u>Triggers</u> <i>For progression to next state</i> -Completion of expected learner actions → Phase 2
<b>2. Initial Management/ Stabilization</b> Rhythm: Sinus HR: 110 BP: 80/60 RR: 20 O <sub>2</sub> SAT: 92%NRB T: 37°C GCS: 9 (E2V2M5)	<i>Patient decreased level of consciousness.</i>  <i>Moaning.</i>  <i>Looks "shocky"</i>	<u>Expected Learner Actions</u> <input type="checkbox"/> Recognize hemodynamic / clinical deterioration <input type="checkbox"/> Activate massive transfusion protocol <input type="checkbox"/> STAT uncrossed blood (if not yet done) <input type="checkbox"/> RSI Intubation <input type="checkbox"/> Traction splint on femur	<u>Modifiers</u> -if blood given, traction applied and appropriate hemodynamically stable RSI complete -> vitals will improve.  <u>Triggers</u> -Completion of expected learner actions → <b>Phase 4</b> - If no traction splint applied, no blood given or unsafe intubation strategy patient arrests → <b>optional phase 3</b>



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<p><b>3. Optional Arrest Phase</b> <i>(only to be used if management plans are poor)</i></p> <p>Cardiac Arrest PEA narrow QRS HR 50 (pulseless) BP 0/0 RR 0</p>	<p><i>Patient loses all vital signs and signs of life.</i></p>	<p><u>Expected Learner Actions</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CPR as long as doesn't interrupt procedures</li> <li><input type="checkbox"/> STAT Blood</li> <li><input type="checkbox"/> Address hemorrhage</li> <li><input type="checkbox"/> Consider H'sT's</li> </ul>	<p><u>Modifiers</u></p> <p><u>Triggers</u></p> <p>-once team has address likely cause of PEA as due to hemorrhage from long bone fracture and treat with blood → <b>Phase 4</b></p>	
<p><b>4. Hemodynamic Stability</b></p> <p>Rhythm: Sinus HR: 80 BP: 100/80 RR: Vent Setting O<sub>2</sub>SAT: 100% intubated GCS: 3 T</p>	<p><i>Patient intubated</i></p>	<p><u>Expected Learner Actions</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Post intubation sedation started</li> <li><input type="checkbox"/> Arrange for neuroimaging</li> <li><input type="checkbox"/> Review labs, portable cxr, pelvis xr and portable femur xray</li> <li><input type="checkbox"/> Start discussing arranging disposition</li> </ul>	<p><u>Modifiers</u></p> <p>-If learners work in area with no CT capability then do not provide CT but proceed to → Phase 5</p> <p><u>Triggers</u></p> <p>-Completion of expected learner actions → Phase 5</p>	
<p><b>5. Raised ICP / Coning</b></p> <p>HR: 40 BP: 165/90 RR: Vent Setting. O<sub>2</sub>SAT: 100% intubated GCS: 3 T</p>	<p><i>Blown pupil.</i></p> <p><i>If sux given during RSI may show irregular respirations. If Roc given then still paralyzed.</i></p>	<p><u>Expected Learner Actions</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Recognize "Cushing Triad" of raised ICP</li> <li><input type="checkbox"/> Call Neurosurg for STAT intervention / transfer</li> <li><input type="checkbox"/> Start mannitol or hypertonic saline</li> <li><input type="checkbox"/> Hyperventilate patient</li> <li><input type="checkbox"/> Reverse trendelenburg position. C-collar removal</li> </ul>	<p><u>Modifiers</u></p> <p><u>Triggers</u></p> <p>--Completion of expected learner actions → End Scenario. Neurosurg will take to OR STAT.</p>	



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## Appendix C: Facilitator Cheat Sheet & Debriefing Tips

*Include key errors to watch for and common challenges with the case. List issues expected to be part of the debriefing discussion. Supplemental information regarding any relevant pathophysiology, guidelines, or management information that may be reviewed during debriefing should be provided for facilitators to have as a reference.*

## References

- 1.
- 2.
- 3.

