

# HEAD TRAUMA

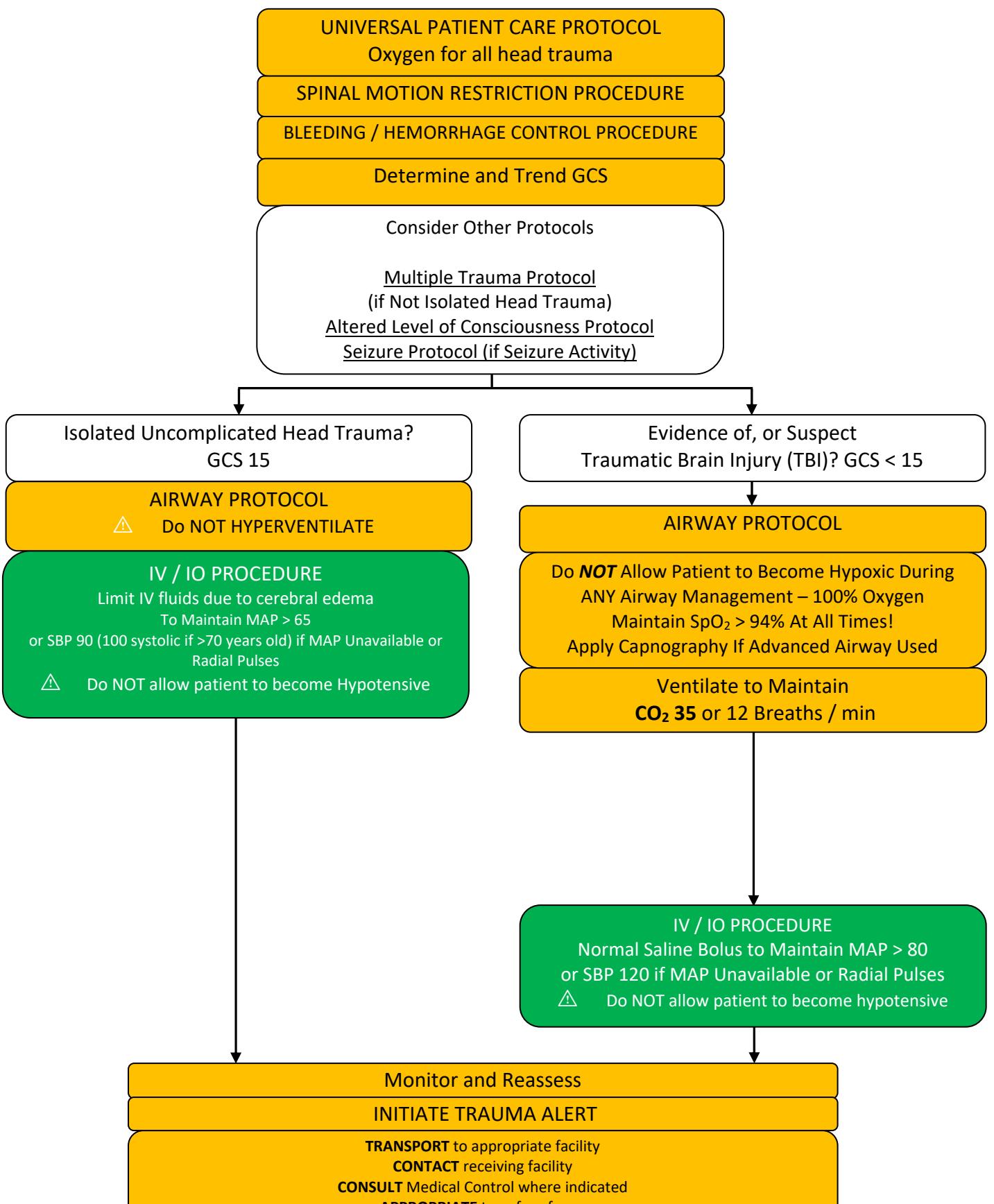
Airway / Breathing

Circulation / Shock

Cardiac

Medical

Trauma



EMT Intervention

AEMT Intervention

PARAMEDIC Intervention

Online Medical Control

# HEAD TRAUMA

HISTORY	SIGNS AND SYMPTOMS	DIFFERENTIAL DIAGNOSIS
<ul style="list-style-type: none"> <li>Time of injury</li> <li>Mechanism: blunt /penetrating</li> <li>Loss of consciousness</li> <li>Bleeding</li> <li>Medical history</li> <li>Medications</li> <li>Evidence of multi-trauma</li> <li>Helmet use or damage to helmet</li> </ul>	<ul style="list-style-type: none"> <li>Pain, swelling, bleeding</li> <li>Altered mental status</li> <li>Unconscious</li> <li>Respiratory distress / failure</li> <li>Vomiting</li> <li>Significant mechanism of injury</li> </ul>	<ul style="list-style-type: none"> <li>Skull fracture</li> <li>Brain injury (concussion, contusion, hemorrhage, or laceration)</li> <li>Epidural hematoma</li> <li>Subdural hematoma</li> <li>Subarachnoid hemorrhage</li> <li>Spinal injury</li> <li>Abuse</li> </ul>
<b>INFANT</b> <i>Birth to age 4</i>	<b>Glasgow Coma Scale</b>	<b>ADULT</b> <i>Age 4 to Adult</i>
4 Spontaneously	<b>Eye Opening</b>	Spontaneously 4
3 To speech		To command 3
2 To pain		To pain 2
1 No response		No Response 1
5 Coos, babbles	<b>Best Verbal Response</b>	Oriented 5
4 Irritable cries		Confused 4
3 Cries to pain		Inappropriate words 3
2 Moans, grunts		Incomprehensible 2
1 No response		No response 1
6 Spontaneous	<b>Best Motor Response</b>	Obey commands 6
5 Localizes pain		Localizes pain 5
4 Withdraws from pain		Withdraws from pain 4
3 Flexion (decorticate)		Flexion (decorticate) 3
2 Extension (decerebrate)		Extension (decerebrate) 2
1 No response		No response 1
____ = TOTAL		TOTAL = ____
<b>KEY POINTS</b>		
<ul style="list-style-type: none"> <li><b>Exam:</b> Mental Status, HEENT, Heart, Lungs, Abdomen, Extremities, Back, Neuro</li> <li>If GCS &lt; 12 consider air / rapid transport and if GCS &lt; 9 intubation should be anticipated.</li> <li><b>GCS ≤ 8? Intubate!</b></li> <li>DO NOT allow patients to become hypoxic, maintain SpO<sub>2</sub> &gt; 94%, abandon intubation attempts if this cannot be maintained. Secure airway by other means.</li> <li>Increased intracranial pressure (ICP) may cause <b>hypertension</b> and bradycardia (Cushing's Reflex).</li> <li><b>Hypotension</b> usually indicates injury or shock unrelated to the head injury and should be aggressively treated.</li> <li>Limit IV fluids unless patient is hypotensive (systolic BP &lt; 90) fluid resuscitate if necessary to maintain BP, Do NOT allow patients to become hypotensive.</li> <li><b>DO NOT</b> attempt to lower the blood pressure in hypertensive head injured patients with medications such as Nitroglycerine (Nitro-Stat).</li> <li>Be alert for c-spine injuries with head trauma.</li> <li>Continually reassess the patient, including pupils, LOC, and neurological status.</li> <li>Any decrease in GCS suggests a TBI surgical emergency, transport to trauma center</li> <li>Capnography is critical! Maintain the CO<sub>2</sub> ranges indicated in protocol, 1 point of CO<sub>2</sub> change = 3% decrease in cerebral perfusion.</li> <li>The most important item to monitor, trend, and document is a change in the level of consciousness / GCS.</li> <li>Herniation may occur. Signs are: <ul style="list-style-type: none"> <li>Cushing's reflex; Bradycardia, hypertension, widening pulse pressure</li> <li>Decreasing level of consciousness progressing towards coma.</li> <li>Dilation of pupils – may be unilateral or bilateral</li> <li>Decerebrate posturing (extension of arms and legs)</li> <li>Decorticate posturing (flexion arms and legs)</li> </ul> </li> <li>Concussions are periods of confusion or LOC associated with trauma, which may have resolved by the time EMS arrives. A physician ASAP should evaluate any prolonged confusion or mental status abnormality, which does not return to normal within 15 minutes or any documented loss of consciousness.</li> <li>Consider <b>Restraints</b> if necessary for patient's and / or personnel's protection per the <u>RESTRAINT PROCEDURE</u>.</li> </ul>		