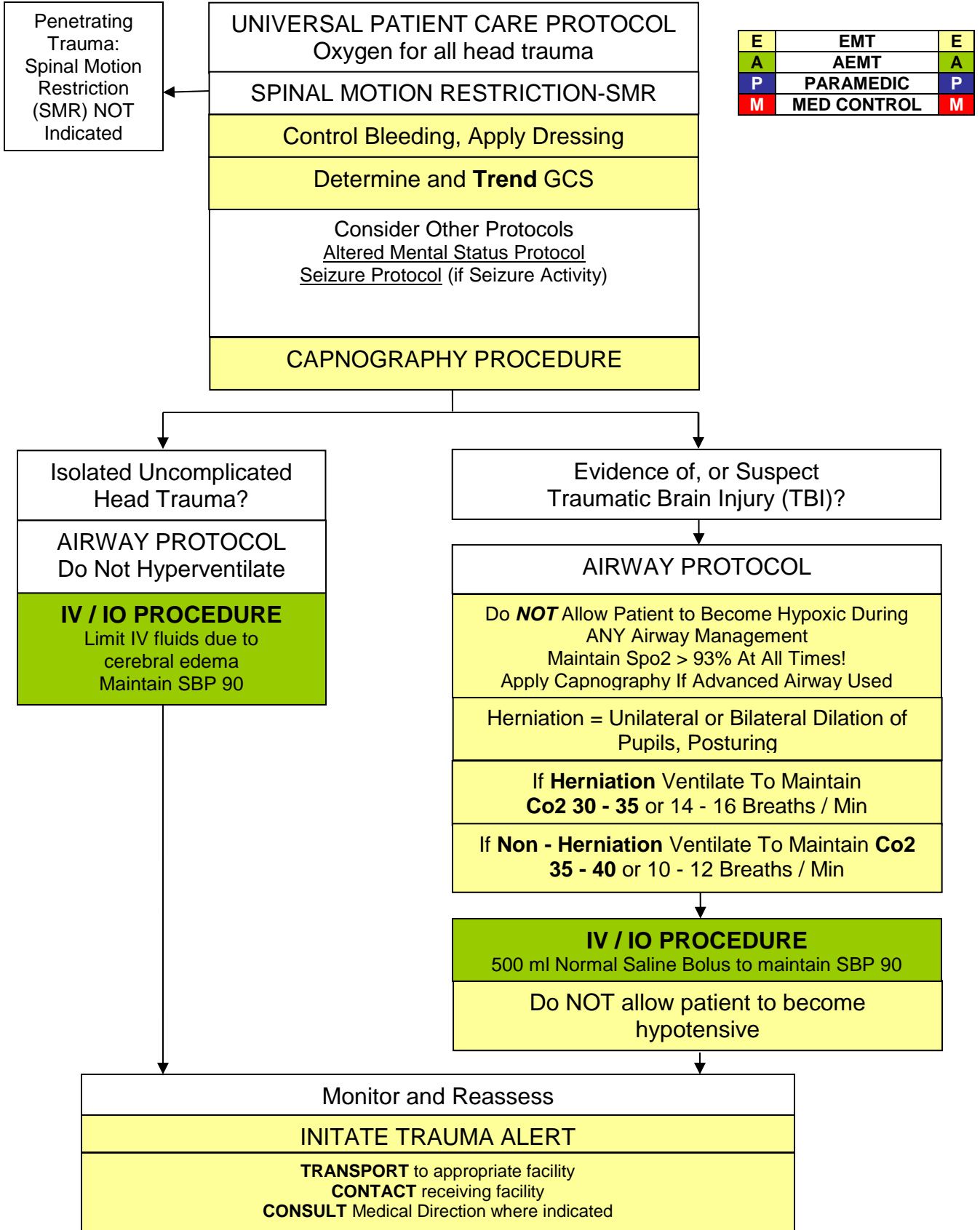




# Section 6: Adult Trauma Protocols

## ADULT TRAUMA: HEAD TRAUMA





## Section 6: Adult Trauma Protocols

### ADULT TRAUMA: HEAD TRAUMA-Cont.

#### PEARLS and KEY POINTS

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>

- **Exam: Mental Status, HEENT, Heart, Lungs, Abdomen, Extremities, Back, Neuro**
- If GCS < 12 consider air / rapid transport and if GCS < 9 intubation should be anticipated.
- **GCS ≤ 8? Intubate / assist ventilations. Do not delay transport**
- DO NOT allow patients to become hypoxic, maintain Spo2 > 93%, abandon intubation attempts if this cannot be maintained. Secure airway by other means.
- Increased intracranial pressure (ICP) may cause **hypertension** and bradycardia (Cushing's Reflex).
- Maintain SBP > 90
- Be alert for c-spine injuries with head trauma.
- Continually reassess the patient, including pupils, LOC, and neurological status.
- Any decrease in GCS suggests a TBI surgical emergency, transport to trauma center
- Capnography is critical! Maintain the Co2 ranges indicated in protocol, 1 point of Co2 change = 3% decrease in cerebral perfusion.
- The most important item to monitor, trend, and document is a change in the level of consciousness / GCS.
- Herniation may occur. Signs are:
  - Cushing's reflex; Bradycardia, hypertension, widening pulse pressure
  - Decreasing level of consciousness progressing towards coma.
  - Dilatation of pupils – may be unilateral or bilateral
  - Decerebrate posturing (extension of arms and legs)
  - Decorticate posturing (flexion arms and legs)
- 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.
- Consider **Restraints** if necessary for patient's and / or personnel's protection per the RESTRAINT PROCEDURE.