GENERAL TRAUMA MANAGEMENT
UPDATED 4/2025
ALL PROVIDERS / EMT

- Treat any penetrating trauma per the ***Penetrating Trauma Guideline.***
- Focused history and physical exam
- Continuous cardiac monitoring, ETCo2, pulse oximetry, and blood pressure (MAP)
- Pediatric lowest acceptable systolic blood pressures are:
  - Birth to 1 month = 60mmHg,
  - 1 month to 1 year = 70mmHg,
  - 1 year to 10 years is = 70mmHg + (age x 2)
  - Over 10 years = 90mmHg.
- **Key Considerations**
  - Scene times should be as short as possible for severely injured patients with a goal of <5 minutes. Perform required procedures enroute to the trauma center.
  - In patients with **penetrating traumatic arrest and time of injuries <15 minutes**, initiate immediate transport and continue all interventions enroute.
  - Transport is highly suggested in cases of trauma involving pediatrics and pregnant patients.
  - Severely injured trauma patients should be transported to an appropriate trauma center, as per the ***Field Trauma Triage Guideline.***
- **Primary Survey:**
  - Hemorrhage Control:
    - Assess for and stop severe hemorrhage
    - Consider TXA administration within 1 hour of injury and hemorrhagic shock is present.
  - Airway:
    - Assess airway patency, ask patient to talk to assess stridor and ease of air movement
    - Evaluate for injuries that may lead to airway obstruction including unstable facial fractures, tooth injuries, expanding neck hematoma, blood or vomitus in the airway, facial burns/inhalation injury
    - Evaluate mental status for ability to protect airway (AVPU= "P" or "U" or GCS <8). These patients will require airway protection.
  - Breathing:
    - Assess respiratory rate and pattern, symmetry of chest wall movement, and presence of breath sounds bilaterally
    - Tension Pneumothorax S/S: Chest injury with hypotension (<MAP 65), narrowed pulse pressure, hypoxia, tachycardia, absent breath sounds, tracheal deviation, and/or JVD
      - Needle thoracostomy: The 4th intercostal space at the anterior axillary line is the **preferred** location
      - Insert needle until lack of resistance is felt and/or rush of blood or air. Consider adding a 10cc syringe to aid in verifying air and preventing too deep of insertion.
  - Circulation:
    - Assess vital signs / check for radial pulse
    - If pelvis is unstable (uncontrolled hemorrhage, significant mechanism, or suspected pelvic involvement with hypotension and an unknown bleeding source), consider pelvic binder to stabilize pelvis
    - Reassess any prior tourniquet applications.
      - Expose wound and determine if tourniquet is needed
      - Replace improvised tourniquets if necessary
      - If needed, replace any tourniquets that are placed over clothing to directly on skin.
      - If not needed, replace tourniquet with hemostatic or pressure dressings

        - Obtain IV/IO access and begin fluid resuscitation as needed
            - Fluid resuscitation up to 1 liter NS/LR or target MAP >65 and/or SBP 90
    - Disability (quick neurologic evaluation):
        - Assess pupils, motor movement of extremities, and mental status (AVPU)
        - In cases of increased ICP or TBI:
            - Refer to ***Head Injury "Traumatic Head Injury"*** guideline
            - Maintain oxygen saturation >94%
            - Maintain SBP >110 mmHg with a MAP of 80 mmHg
            - Elevate head of bed to 30 degrees if there is no C-spine injury suspected
            - In cases of active herniation, refer to hyperventilation guide in head injury protocol
    - Exposure/Environment:
        - Rapid evaluation of entire body (including back) to assess for injuries
        - Prevent hypothermia by removing wet clothing, providing passive rewarming, and use of warmed IV fluids (if fluids indicated)
- **Blunt Trauma Management-** If mechanism of injury includes blunt trauma, manage accordingly based on anatomy involved
    - Head/Neck- Stabilize and determine cervical, thorax, and lumbar spine stability. Address open wounds with bandages, pressure, and hemostatic dressings. Elevate the head of bed to 30* if there are no contraindications
    - Extremities- Identify if pulse, motor, and sensory are present. Stabilize the extremity and control any bleeding with bandaging, pressure, hemostatic gauze, or tourniquet.
    - Chest- Auscultate lung sounds and visualize if any flail segments are present. Consider needle decompression if tension pneumothorax is suspected. Stabilize flail chest utilizing pressure and positive pressure ventilation.
    - Abdominal/Pelvis- Stop any bleeding utilizing bandaging, pressure, and hemostatic gauze. Consider pelvic binder placement (uncontrolled hemorrhage, significant mechanism, or suspected pelvic involvement with hypotension and an unknown bleeding source)

- **Withholding and Termination of Resuscitative Efforts**
        - Resuscitative efforts may be withheld for trauma patients with the following injuries:
        - Decapitation
        - Hemicorporectomy (Transection of trunk)
        - Dependent lividity or signs of rigor mortis
    - **Blunt and penetrating trauma (with signs of life):** Goal is a scene time of < 5 minutes and rapid transport to nearest trauma facility. Continue all resuscitative efforts throughout transport.
    - **Blunt traumatic arrest**: Upon arrival on scene in patients with blunt traumatic arrest, a slightly longer scene time of 15 minutes may be required for resuscitative efforts. If no return to spontaneous circulation is achieved, contact medical control for approval to terminate resuscitation.
    - **Penetrating traumatic arrest >15 minutes:** Contact medical control to discuss termination of resuscitative efforts.

- Treat pain per the ***Pain Management Guideline.***
- Treat anxiety per the ***Behavioral Emergencies Guideline***

ADULT

AEMT

- Vascular access and begin fluid therapy
- Consider Supraglottic Airway

PARAMEDIC

- Advanced airway management
- **Tranexamic Acid (TXA)**
  - **2g in 100ml** NS/LR **IV/IO infusion** over 10 minutes
- Suspected Tension Pneumothorax:
  - Immediate needle decompression
    - Insert <14g needle at 4th ICS along the anterior-axillary line (triangle of safety)
  - **SIGNS INCLUDE-**
    - Penetrating trauma with shock
    - Hypotension (<MAP 65)
    - Narrowed pulse pressures
    - Hypoxia
    - Tachycardia
    - Absent breath sounds
    - Tracheal deviation
    - JVD
- Traumatic Arrest
  - Consider bilateral needle decompression based on mechanism of injury

PEDIATRICS

Pediatric dose should never exceed adult dose

AEMT

- Vascular access and begin fluid therapy
- Consider Supraglottic Airway

PARAMEDIC

- Advanced airway management
- **Tranexamic Acid (TXA)**
  - **Contact OLMC**
- Suspected Tension Pneumothorax:
  - Immediate needle decompression
    - Insert <14g needle at 4th ICS along the anterior-axillary line (triangle of safety)
  - **SIGNS INCLUDE-**
    - Penetrating trauma with shock
    - Hypotension (<MAP 65)
    - Narrowed pulse pressures
    - Hypoxia
    - Tachycardia
    - Absent breath sounds
    - Tracheal deviation
    - JVD
- Traumatic Arrest
  - Consider bilateral needle decompression based on mechanism of injury