Notes/Definitions

- Early signs of shock include: tachycardia, tachypnea, pale cool or clammy skin, dizziness, weakness, nausea or vomiting, enlarged pupils.
- Late signs of shock include: hypotension, altered or unresponsive, weak pulse, shallow rapid or irregular respirations, cyanosis, loss of peripheral pulses.

Base Hospital Contact if meets Trauma Criteria

BLS Interventions

- Refer to BLS Standing Orders (SO-B-001).
- Apply cervical collar and /or spinal motion restriction as applicable.

Initial Assessment

xABCDE Assessment: Prioritize life-threatening hemorrhage and shock recognition.

- **(x) Exsanguinating Hemorrhage Control**
  - Immediately apply direct pressure to control bleeding. Scalp hemorrhage can be life threatening.
  - Use of hemostatic dressings indicated for deep wounds or junctional areas.
  - Apply tourniquet 2 to 4 inches above injury in the setting of life-threatening injury.
  - If bleeding is uncontrolled with single tourniquet, apply 2nd tourniquet proximally to the first.
  - Reassess dressings and tourniquets after patient movement.
- **(A) Airway**
  - Ensure patent airway and dislodge any airway obstruction.
  - Ensure proper positioning for adequate ventilation and suction as needed.
  - Consider insertion of nasopharyngeal airway (NPA) or oropharyngeal airway (OPA) per SO-FR-004 and SO-FR-005.
  - Consider BVM for moderate to severe distress, apnea, agonal respirations, or altered mental status with hypoventilation or hypoxia despite maximal supplemental O2.
- **(B) Breathing**
  - Assess vital signs, including pulse oximetry
  - Administer supplemental oxygen as necessary to maintain SpO2 ≥ 94%.
  - Apply vented chest seal to sucking chest wound or large open chest wall injury
- **(C) Circulation**
  - Aggressively control external hemorrhage
  - Assess for signs and symptoms of shock
- **(D) Disability**

- Apply cervical collar for spinal cord protection

- **(E) Environmental**
  - Reduce heat loss by removing wet clothing and drying the patient
  - Cover the patient with warm, dry insulating material covered with a barrier
  -

ALS Interventions

- Consider advanced airway management and/or high flow O2 by either mask or nasal cannula if applicable.
- Cardiac monitoring if applicable.
- Obtain IV / IO if applicable.
- For chest trauma with unilateral decreased or absent breath sounds and **hypoxia**, assess for signs of a tension pneumothorax. Signs include acute respiratory distress, respiratory arrest, circulatory collapse (hypotension, poor perfusion), distended neck veins.
  - If chest seal previously applied remove the dressing, allow air to escape and reapply dressing.
  - **Contact Base Hospital** for an order for needle decompression (needle thoracostomy) (refer to PR-060).
  - **Base Hospital Order** required in all needle decompressions except in setting of an MCI, remote rescue, tactically unstable scene, or late signs of shock. Provide documentation for these settings if base order not obtained.
- If hypotensive SBP < 90, administer:

  ► **Normal Saline 250 mL IV / IO bolus** – may repeat up to 1 liter to maintain adequate perfusion
- For hemorrhagic shock related to blunt or penetrating trauma not greater than 3 hours, administer in conjunction with normal saline:

  ► **TXA 1 gm in 100 mL NS IV / IO** infusion over 10 minutes once
  - Refer to OCEMS PR-XXX.
  - **Notify Base Hospital** TXA was administered.
- Treat for pain choosing one of the following to administer:

  ► **Fentanyl 50 mcg IV / IM** – may repeat once after 3 minutes, hold for SBP < 90

  ► **Fentanyl 100 mcg IN** – may repeat once after 3 minutes, hold for SBP < 90

  ► **Morphine sulfate 5 mg (or 4 mg CARPUJECT™) IV / IM / IO** – may repeat once after 3 minutes, hold for SBP < 90

  ► **Ketamine 0.1 mg / kg IV** – may repeat once after 15 minutes, max single dose 10 mg

- ▶ **Ketamine 0.5 mg / kg IM** – may repeat once after 15 minutes, max single dose 50 mg
- ▶ **Ketamine 1 mg / kg IN** – once, max dose 100 mg
- ▶ **Ketorolac 0.25 mg / kg IV / IO / IM** (maximum single dose of 15 mg) once
  - *Contraindicated in ages > 65, hemorrhaging patients, and designated trauma center patients.*

- For nausea or vomiting and not suspected or known to be pregnant, administer:
  - ▶ **Ondansetron (Zofran) 8mg ODT** – once
  - ▶ **Ondansetron (Zofran) 4 mg IV** – may repeat once after 3 minutes

Transport Considerations

- **Base Hospital Contact required** for patients meeting trauma criteria (refer to OCEMS Policy 310.30 or 310.31). ALS transport to the most appropriate Trauma Center as directed by the Base Hospital.
- **Base Hospital Contact required** for all hypotensive hemorrhage cases for Trauma Center triage consideration. ALS transport to destination as directed by the Base Hospital.
- ALS providers may determine ALS or BLS level of transport to the nearest, most appropriate ERC for patients not meeting trauma center criteria.

Additional Considerations

Specific Injury Management

Amputation

- Control hemorrhage as stated above.
- Dress stump with sterile dressing.
- Wrap amputated part in sterile dry material, place in sealed container, then place container in ice.
- Do not allow tissue to directly contact ice or water.

Evisceration

- Cover with large saline-moistened sterile dressing.
- Do not replace abdominal contents.

Impaled Objects

- Stabilize in place.
- Remove only if interfering with airway management or CPR.

Orthopedic Injury

- If angulated and pulseless: gently attempt alignment unless resistance or severe pain occurs.
- If angulated with pulse present: splint in position.

- Open fractures: cover with moist sterile dressing; do not reduce.
  - Exception: traction splint for femur fracture can be reduced.
- Document distal neurovascular status before and after splinting. Always note presence or absence of peripheral pulses and sensation.
- May place cold packs over splinted fractures sites for comfort.

Airbag Deployment

- For eye irritation, brush off any powder around upper face.
- Remove contact lenses if present unless concern for globe rupture.
- Irrigate with water or normal saline continuously throughout transport.

Eye Injury

- Cover both eyes loosely.
- Avoid pressure on globe.
- Position upright if tolerated and if spinal motion restriction not required.

Head Injury

- Avoid hyperventilation EtCo2 > 45
- Provide supplemental oxygen to maintain SPO2 > 94%.
- Reassess mental status.
- Avoid hypotension or hypoxemia.

Base Hospital Considerations

- Patients meeting trauma triage criteria (OCEMS Policy 310.30 or 310.31) should be routed to the nearest open OCEMS designated Trauma Center.
- Trauma victim designation is determined by the Base Hospital.
- For chest trauma with unilateral decreased or absent breath sounds and **hypoxia**, assess for signs of a tension pneumothorax. Signs include acute respiratory distress, respiratory arrest, circulatory collapse (hypotension, poor perfusion), distended neck veins.
  - ▶ **Order a needle decompression** (needle thoracostomy) per OCEMS PR-060
- Do not give push dose epinephrine in traumatic hemorrhagic shock or full arrest
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Cross References:
SO-B-001 BLS Standing Orders
SO-FR-004 Oropharyngeal Airway (OPA)

SO-FR-005 Nasopharyngeal Airway (NPA)
PR-030 Endotracheal Intubation (including EtCO2)
PR-135 Supraglottic Airway Device Placement – Adult / Adolescent
PR-060 Needle Thoracostomy – Adult / Adolescent
PR-XXX Tranexamic Acid For Bleeding Management
Policy 310.30 Trauma Triage
Policy 310.31 Trauma Triage Algorithm

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