UFA EMS PROTOCOL – GENERAL TRAUMA GUIDELINES

Indication: Patients who have sustained injury because of mechanical trauma including blunt and penetrating injuries and burns.

Intervention Scope of Care:

Direct Pressure - EMT
Bandaging - EMT
Splinting - EMT
Occlusive Dressing - EMT
Tourniquet - EMT
Pelvic Binder - EMT
Passive Warming - EMT
Needle Decompression - Paramedic
Tranexamic Acid (TXA) - Paramedic

Procedure: UFA EMS Providers should rapidly assess for any immediately obvious, life-threatening injuries and rapidly correct them in the order that they are identified according to the following general priorities:

1. For traumatic injuries related to multiple casualty incidents, refer to ***UFA Operational Procedures and Guidelines: Multiple Casualty Incidents***
2. Severe and obvious Hemorrhage
    a. Utilize crewmembers, other professional responders, or bystanders to rapidly apply direct pressure to stop any visible hemorrhage.
    b. UFA EMT/AEMT/Paramedics should rapidly apply a tourniquet to control any extremity hemorrhage that is not controlled with the use of direct pressure and elevation. Refer to *UFA EMS Protocol – Extremity Trauma/External Hemorrhage Management* and *UFA EMS Protocol – Amputations*.
        i. UFA EMS Providers should record the time of tourniquet application in a manner that is readily transferrable to the receiving hospital or to any provider to whom care will be transferred.
3. Airway – Perform a rapid visual assessment for obstructions or damage to the patient's airway
    a. Refer to *UFA EMS Protocol – Airway Management*
    b. Ask the patient to talk to assess for stridor and adequacy of air movement.
    c. Look for injuries that may lead to airway obstruction including unstable facial features, expanding neck hematoma, blood or vomitus in the airway, facial burns or inhalation injuries.
    d. Evaluate mental status for the patient's ability to protect their own airway.
        i. Patients with a Glasgow Coma Scale (GCS) less than 8 or "P" or "U" on the AVPU Scale may require immediate intervention(s) to protect their airway.
    e. UFA EMS Providers should rapidly control the patient's airway as specified in *UFA EMS Protocol – Airway Management*
        i. Avoid endotracheal intubation when possible for pediatric patients unless other means of airway management are unavailable or ineffective.

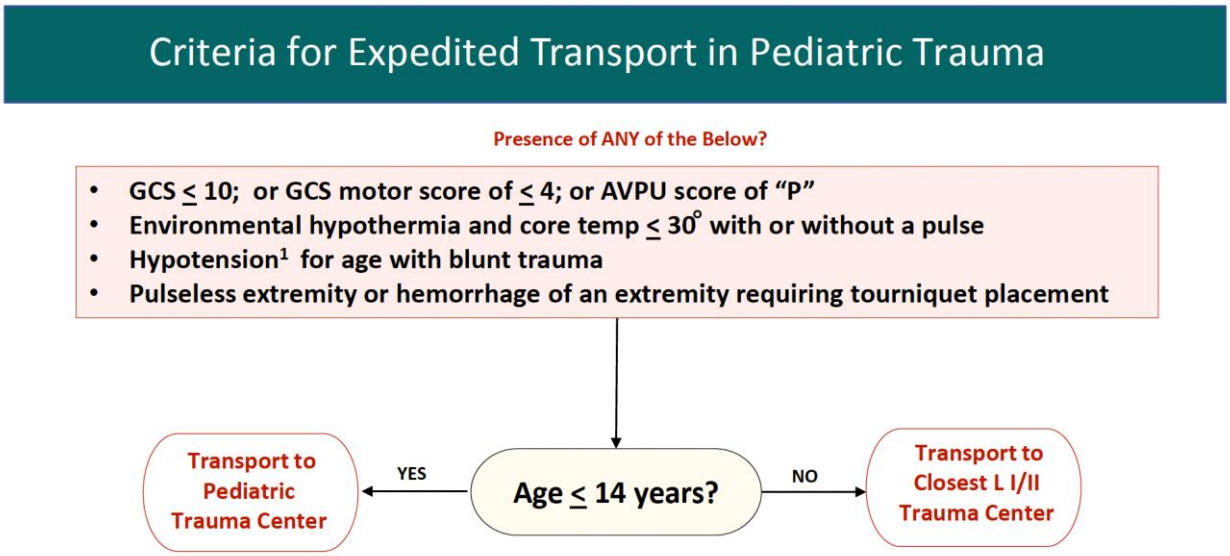
f. Orotracheal intubation utilizing a video laryngoscope is the preferred method of definitive airway management in patients suffering from traumatic injury including:
    i. Burn injuries
    ii. Electrocution injuries
    iii. Submersion injuries
    iv. Trauma to the face or neck including penetrating injuries, strangulation, and hanging
    v. Anaphylaxis, facial, or airway swelling not rapidly reversed in the field

4. Breathing – Perform a rapid visual and auditory assessment of the patient's breathing status and adequacy
    a. Assess respiratory rate and pattern
    b. Assess symmetry of chest wall movement
    c. Listen bilaterally on the chest wall for breath sounds
    d. If absent or diminished breath sounds and hypotension are present, consider tension pneumothorax and a UFA Paramedic should perform a needle thoracostomy (needle decompression).
    e. For an open chest wound, UFA EMT/AEMT/Paramedic should place an occlusive dressing sealed on 3 sides.
    f. Provide supplemental oxygen if indicated.
5. Circulation
    a. Assess blood pressure and heart rate.
        i. Pediatric Patients: Check for radial, brachial and/or femoral pulses (NOT carotid)
        ii. Pediatric Patient: Use Mean Arterial Pressure (MAP) to assess adequacy of blood pressure
    b. Signs of hemorrhagic shock include shock index greater than 1.0, tachycardia, hypotension, pale, cool, clammy skin, capillary refill greater than 2 second. Refer to *UFA EMS Protocol – Shock and Fluid Therapy*
    c. If the patient's pelvis is unstable and the patient is hypotensive, place a pelvic binder or sheet to stabilize the pelvis.
    d. Establish bilateral, large bore IV access. Refer to *UFA EMS Protocol – Venous Access*.
    e. Fluid Resuscitation. Refer to *UFA EMS Protocol – Shock and Fluid Therapy*
        i. Adult Systolic Blood Pressure > 90 mmHg no fluid resuscitation indicated
        ii. Adult Systolic Blood Pressure < 90 mmHg or MAP < 50, UFA AEMT or Paramedic should administer an NS fluid bolus of no more than 1000 mL. Administration of more than 1000 mL to patients suffering hypotension due to traumatic injury should only be done after consultation with **online medical control**.
            1. In the presence of head injury, Adult Systolic Blood Pressure should be maintained above 100 mmHg or MAP > 60
    f. Administer Tranexamic Acid (TXA) according to *UFA Medication Reference – Tranexamic Acid (TXA).*
6. Disability
    a. Perform a rapid neurologic assessment to determine the patient's Glasgow Coma Scale (GCS) or AVPU Scale for pediatric patients
    b. Assess gross motor movement in all extremities

   c. Evaluate for any clinical signs of traumatic brain injury (TBI) with herniation including:
      i. Unequal pupils
      ii. Asymmetrical motor function
      iii. Posturing
7. Exposure
   a. Expose the patient's entire body to identify sites of penetrating wounds or other blunt injuries.
      i. Be sure to roll the patient to examine the patient's posterior for injuries
      ii. If possible, exposure of the patient should be conducted in the back of an ambulance. Patient should be covered with a blanket or sheet after being fully exposed for the purpose of rapid trauma evaluation.
      iii. Take steps to prevent hypothermia
   b. Treat for pain as specified in *UFA EMS Protocol – Pain Management*
8. Transport – Refer to *UFA EMS Protocol – General Transport Criteria*
   a. Most interventions for traumatic injury can be accomplished while Enroute to a trauma center. UFA EMS providers should make every effort to limit on-scene time to 10 minutes or less if possible.
   b. Pediatric Patients should be transported to Primary Children's Medical Center by ground or air if possible.
   c. Consider requesting air ambulance support when ground transport time to an appropriate trauma facility is longer than 15 minutes.
      i. Consider requesting that an air ambulance rendezvous at an established EMS helipad.
      ii. Utilize law enforcement personnel to establish and manage an air ambulance landing zone.
   d. Consider the option for transporting trauma patients (including pediatric patients) to a closer facility even if it is not a trauma center, for stabilizing intervention such as RSI.
9. Ongoing and Additional Considerations:
   a. Conduct and document a detailed physical exam and ongoing assessments for all patients suffering from traumatic injury. Ongoing assessment for patients who are or may become unstable, should be conducted and documented at least every 5 minutes.
      i. Patients in compensated shock, especially pediatric patients, may initially present in stable condition but may deteriorate rapidly.
      ii. Patients with intracranial hemorrhage may deteriorate rapidly
      iii. Anticipate the potential for deteriorating airway status
   b. Refer to *UFA EMS Protocol – Selective Spinal Immobilization* for considerations related to spinal precautions.
   c. Provide pain management in accordance with *UFA EMS Protocol – Pain Management*
10. Traumatic Cardiac Arrest: Refer to *UFA EMS Protocol – Death Determination and Termination of Resuscitation*
   a. Consider bilateral needle decompression based on mechanism of injury and any clinical indications of tension pneumothorax prior to termination of efforts in all patients (adult and pediatric) with traumatic cardiac arrest.

References:

UFA Operational Procedures and Guidelines: Multiple Casualty Incidents
UFA EMS Protocol – General Transport Criteria
UFA EMS Protocol – Extremity Trauma/External Hemorrhage Management
UFA EMS Protocol – Amputations
UFA EMS Protocol – Airway Management
UFA EMS Protocol – Shock and Fluid Therapy
UFA EMS Protocol – Pain Management
UFA EMS Protocol – Venous Access
UFA EMS Protocol – Selective Spinal Immobilization
UFA EMS Protocol – Death Determination and Termination of Resuscitation
UFA Medication Reference – Tranexamic Acid (TXA)



Pediatric Hypotension based on Mean Arterial Pressure (MAP)	
	Mean Arterial Pressure (MAP)
Any patient with possible head injury	MAP < 60
All other pediatric patients	MAP < 50