

# Multiple Trauma



## History

- Time and mechanism of injury
- Damage to structure or vehicle
- Location in structure or vehicle
- Others injured or dead
- Speed and details of MVC
- Restraints / protective equipment
- Past medical history
- Medications

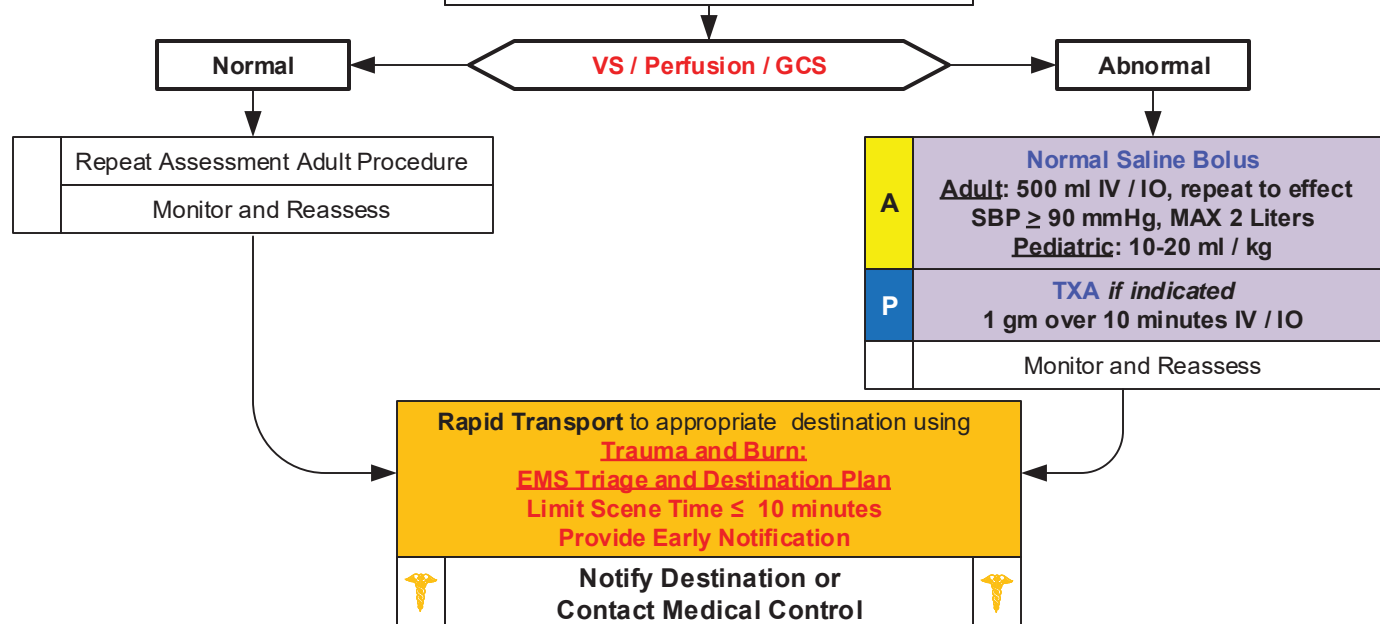
## Signs and Symptoms

- Pain, swelling
- Deformity, lesions, bleeding
- Altered mental status or unconscious
- Hypotension or shock
- Arrest

## Differential (Life threatening)

- Chest: Tension pneumothorax  
Flail chest  
Pericardial tamponade  
Open chest wound  
Hemothorax
- Intra-abdominal bleeding
- Pelvis / Femur fracture
- Spine fracture / Cord injury
- Head injury (see Head Trauma)
- Extremity fracture / Dislocation
- HEENT (Airway obstruction)
- Hypothermia

	Age Appropriate Airway Protocol(s) AR 1, 2, 3, 5, 6 <i>if indicated</i>
	Control External Hemorrhage Consider Pelvic Binding Splint Suspected Fractures
P	Chest Decompression-Needle Procedure <i>if indicated</i>
	<b>Obtain and Record GCS</b>
A	IV / IO Procedure
P	Cardiac Monitor
	Head Injury Protocol TB 5 <i>if indicated</i>
	Altered Mental Status Protocol UP 4 <i>if indicated</i>
	Spinal Motion Restriction Procedure / Protocol TB 8 <i>if indicated</i>
	Pain Control Protocol UP 11 <i>if indicated</i>



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Always weigh the risks and benefits of endotracheal intubation in the field against transport. All prehospital endotracheal intubations are considered high risk. If ventilation / oxygenation is adequate consider the anticipated clinical course of the patient when making decisions on how to manage the airway. The most important airway device and the most difficult to use correctly and effectively is the Bag Valve Mask (not the laryngoscope). Few prehospital airway emergencies cannot be temporarily managed with proper BVM techniques. **The most important way to avoid a failed airway is to identify patients with expected difficult airway , difficult BVM ventilation, difficult BIAD, difficult laryngoscopy and / or difficult cricothyrotomy.**

**TXA IS NOT TO BE USED IN PEDIATRIC PATIENTS (< 12 YEARS OF AGE).**

## TXA ADMINISTRATION GUIDELINES

### INDICATIONS:

- < 3 hours from time of injury,
- SBP < 90 mmHg ~OR~ HR > 110 bpm,
- Obvious significant bleeding, penetrating trauma, Multiple trauma

### CONTRAINDICATIONS:

- Recent PE/DVT history
- Evidence of DIC

## TXA INSTRUCTIONS

**TXA 1 GRAM OVER 10 MINUTES**

**MIX 10 ML VIAL OF TXA (1 GRAM) IN 50 ML BAG OF NS (TOTAL OF 60 ML)  
USE 10 GTT SET AND ADMINISTER 60 GTT/MIN**

## **Pearls**

- **Recommended Exam:** Mental Status, Skin, HEENT, Heart, Lung, Abdomen, Extremities, Back, Neuro
- **Items in Red Text are key performance measures used in the EMS Acute Trauma Care Toolkit**
- **Transport Destination is chosen based on the EMS System Trauma Plan with EMS pre-arrival notification.**
- **Scene times should not be delayed for procedures. These should be performed en route when possible. Rapid transport of the unstable trauma patient to the appropriate facility is the goal.**
- **Control external hemorrhage and prevent hypothermia by keeping patient warm.**
- **Consider Chest Decompression with signs of shock and injury to torso and evidence of tension pneumothorax.**
- **Trauma Triad of Death:**  
**Metabolic acidosis / Coagulopathy / Hypothermia**  
**Appropriate resuscitation measures and keeping patient warm regardless of ambient temperature helps to mitigate metabolic acidosis, coagulopathy, and hypothermia.**
- **Bag valve mask is an acceptable method of managing the airway if pulse oximetry can be maintained  $\geq 90\%$**
- **Tranexamic Acid (TXA):**  
Agencies utilizing TXA must have approval from your T-RAC.
- **Trauma in Pregnancy:**  
Providing optimal care for the mother = optimal care for the fetus. After 20 weeks gestation (fundus at or above umbilicus) transport patient on left side with 10 – 20° of elevation.
- **Pediatric Trauma:**  
**Age specific blood pressure 0 – 28 days > 60 mmHg, 1 month - 1 year > 70 mmHg, 1 - 10 years > 70 + (2 x age)mmHg and 11 years and older > 90 mmHg.**
- **Geriatric Trauma:**  
Evaluate with a high index of suspicion.  
Often occult injuries are more difficult to recognize and patients can decompensate unexpectedly with little warning.  
Risk of death with trauma increases after age 55.  
SBP < 110 may represent shock / poor perfusion in patients over age 65.  
Low impact mechanisms, such as ground level falls might result in severe injury especially in age over 65.
- See Regional Trauma Guidelines when declaring Trauma Activation.
- Severe bleeding from an extremity not rapidly controlled with direct pressure may necessitate the application of a tourniquet.
- Maintain high-index of suspicion for domestic violence or abuse, pediatric non-accidental trauma, or geriatric abuse.