

# 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 Specific Blood Pressure indicating possible shock

Age 0 – 28 days: SBP < 60

Ages ≥ 1 month: SBP < 70

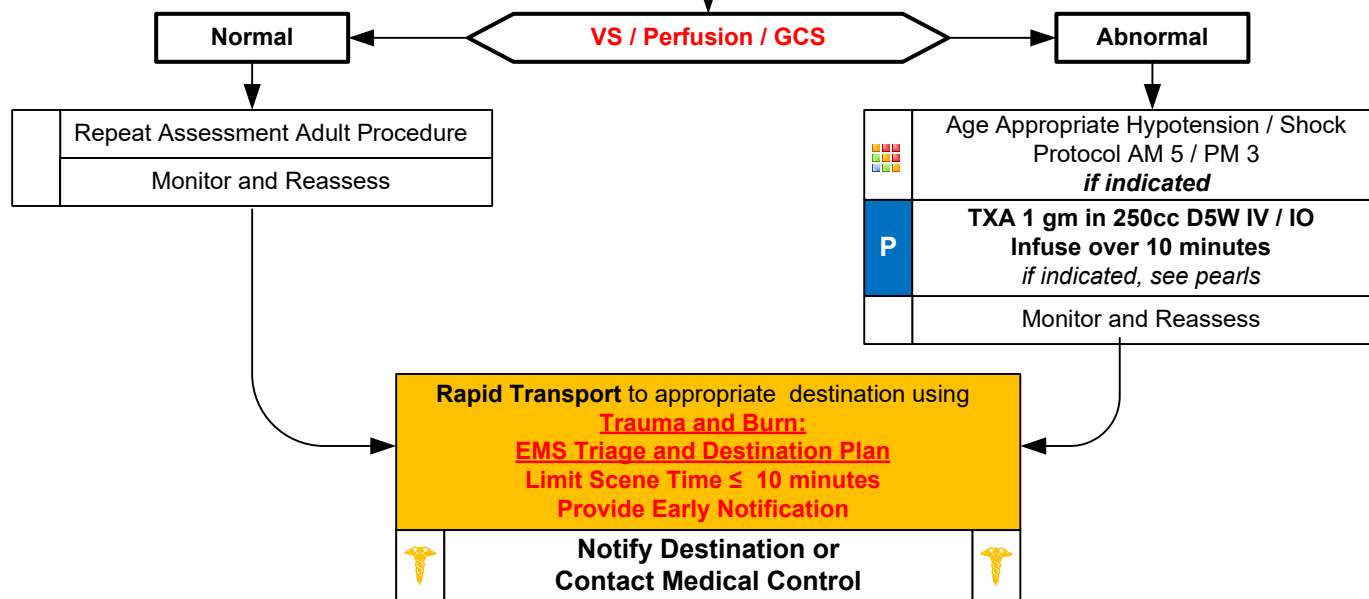
Age 1 – 9: SBP < 70 + (2x Age)

Ages 10 – 64: SBP < 90

Ages ≥ 65: SBP < 110

All ages Shock Index:  
HR > SBP

	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 WTP 1 <i>if indicated</i>
	<b>Obtain and Record GCS</b>
	IV o/ IO Access Protocol UP 6
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>



# Multiple Trauma



**\*\* LIMIT SCENE TIME TO  $\leq$  10 MINUTES \*\***

## 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**
- \* **BVM is an acceptable method of managing the airway if pulse oximetry can be maintained  $\geq$  90%**
- \* **Transport Destination is chosen based on the EMS System Trauma Plan with EMS pre-arrival notification.**
- \* **Scene time should not be delayed for procedures, they should be performed during transport 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.**
- \* **Decompress chest with signs of shock and injury to torso as well as with signs 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.**
- \* **Tranexamic Acid (TXA):**

TXA administration has been approved by the Capital Regional Trauma Advisory Committee (CapRAC)

Indications for IV Tranexamic Acid Use:

  - \* Patient Age  $\geq$  16 years old
  - \* Hemorrhage that can not be controlled with tourniquet or direct pressure
  - \* Elapsed time since injury  $\leq$  3 hours
  - \* Systolic blood pressure less than 90 mmHg or heart rate  $>$  110
- \* **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.
- \* **Geriatric Trauma:**

**Age  $\geq$  65: SBP  $<$  110 mmHg or HR  $>$  SBP may indicate shock.**

Evaluate with a high index of suspicion for occult injury.

Injuries not obvious are difficult to recognize and cause decompensation unexpectedly with no 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.
- \* **Refer to your Regional Trauma Guidelines when declaring Trauma Activation.**
- \* Severe bleeding from an extremity, not rapidly controlled with direct pressure, needs application of a tourniquet.
- \* Maintain high-index of suspicion for domestic violence or abuse, pediatric non-accidental trauma, or geriatric abuse.