### History
- Time of injury
- Mechanism (blunt vs. penetrating)
- Damage to structure or vehicle
- Location of patient in structure or vehicle
- Restraints or protective equipment use
- Past medical history
- Medications

### Signs and Symptoms
- Evidence of trauma
  - Pain, swelling, deformity, lesions, or bleeding
  - AMS
  - Unconscious
  - Respiratory distress or failure
  - Hypotension or shock
  - Arrest

### Differential
- Chest:
  - Tension pneumothorax
  - Flail chest
  - Pericardial tamponade
  - Open chest wound
  - Hemothorax
- Intra-abdominal bleeding
- Pelvis or femur fracture
- Spinal injury
- Head injury
- Hypothermia

### Early transport
- Limit scene time to 10 minutes
- Control hemorrhaging
  - Apply tourniquet for hemorrhage
- If wound is in a critical vascular area not accessible for a tourniquet,
  - Wound packing with hemostatic gauze
- Secure airway and support respiratory rate
- Spinal Motion Restriction *if indicated*
- Place splints and cold packs to stabilize fractures as necessary
- Consider, Needle decompression
  - For open wounds to chest/abdomen, apply occlusive dressing

### Respiratory Arrest/Failure
- Cardiac monitor
- EtCO₂ monitoring
- If SBP < 80 in adults
  - Normal Saline bolus 500ml IV/IO
  - May repeat as long as criteria above exists.
  - Maximum 1L
- If poor perfusion or shock in pediatrics
  - Normal Saline bolus IV/IO
  - Use pediatric tape and refer to dosing guide
  - Repeat to age dependent goal SBP
  - May repeat as long as criteria above exists

### Trauma – Head Trauma

### Tourniquet use should not be delayed until a patient is in shock or is clearly exsanguinating. It should be applied early and can be used safely without risk of patient injury. Do not wait; apply often and tighten if needed.
Pearls

• ALS procedures in the field do not significantly improve patient outcome in critical trauma patients.
• Basic airway management is preferred unless unable to effectively manage with BLS maneuvers. Utilize modified jaw thrust technique to open the airway.
• Intubation of head injury patients is best addressed at the hospital.
• Hypotension is age dependent and is not always a reliable sign. It should be interpreted in context with the patient’s typical BP, if known. Shock may be present with a seemingly normal blood pressure initially.
  ◦ Neonate: < 60mmHg or weak pulses
  ◦ Infant: < 70mmHg or weak pulses
  ◦ 1-10 years: < 70mmHg + (age in years x2)
  ◦ Over 10 years: <80mmHg
  ◦ Over 65 years: <110mmHg
• Stabilize flail segments with bulky dressing.
• Cover eviscerated bowel with dry sterile dressing.
• Stabilize impaled object(s) with bulky dressing. Do not remove.
• Avoid hyperventilation. Maintain an EtCO₂ of 35 or greater, which may be unreliable if the patient was subject to multisystem trauma or poor perfusion.
• An important item to monitor and document is a change in the level of consciousness by repeat examination.
• Do not overlook the possibility of associated domestic violence or abuse.