Multi-System Trauma

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
- 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

Suspected head injury?
- No
- Yes

Trauma – Head Injury

Notify receiving facility
Contact Base Hospital for medical direction

Respiratory Arrest/Failure if indicated

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: < 90mmHg
  ◦ 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.