Contra Costa County Emergency Medical Services

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
- Spinal Motion Restriction
  - If indicated
- Secure airway and support respiratory rate
- Place splints and cold packs to stabilize fractures as necessary
- Control hemorrhaging
- Establish IV/IO
- Cardiac monitor
- EtCO₂ monitoring
- Needle Thoracostomy
  - If indicated
- If SBP < 90 in adults
  - Normal Saline bolus 500ml IV/IO
  - Reassess patient for criteria above
  - May repeat to a Maximum 1L as long as criteria above exists
- If poor perfusion or shock in peds
  - Normal Saline bolus IV/IO
  - Use PEDIATAPE and refer to dosing guide
  - Repeat to age dependent goal SBP
  - May repeat to a Maximum 1L as long as criteria above exists
- In the absence of head trauma, age-specific hypotension, poor perfusion or AMS
  - Consider Fentanyl for pain control

Notify receiving facility.
Contact Base Hospital for medical direction, as needed.

Exit to Airway TG if indicated
Exit to Pain Control TG if indicated
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Pears

- 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 jaw thrust technique to open the airway.
- Intubation of head injury patients is best addressed at the hospital. Advanced Airways should not be used in traumatic arrest.
- In cases of clear-cut traumatic arrest, epinephrine is not indicated in PEA or asystole. Epinephrine will not correct arrest caused by a tension pneumothorax, cardiac tamponade, or hemorrhagic shock. If there is any doubt as to the cause of arrest, treat as a non-traumatic arrest.
- Hypotension is age dependent. This is not always reliable and 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
- Avoid hyperventilation. Maintain an EtCO₂ of 35 or greater, which may be unreliable if the patient was subject to multisystem trauma or poor perfusion.
- Hypotension usually indicates injury or shock and should be treated aggressively.
- 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.