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 hemorrhage
  - Do not delay transport
- 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

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

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

Effective Jan. 2021
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.