San Mateo County Emergency Medical Services

### Multi-System Trauma

For any traumatic injuries that involve multiple systems or isolated chest or abdominal injuries. For injuries involving the head, use Head Trauma

Differential

Chest:

**Signs and Symptoms** 

Evidence of 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

• Pain, swelling, deformity, lesions, or bleeding Tension pneumothorax AMS Flail chest • Unconscious • Pericardial tamponade Respiratory distress or failure Open chest wound • Hypotension or shock • Hemothorax • Arrest 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 uncontrolled hemorrhage If wound is in a critical vascular area not accessible for a tourniquet, Wound packing with Ε hemostatic gauze Secure airway Respiratory Arrest/Failure 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 Establish IV/IO injury? Cardiac monitor No Yes EtCO<sub>2</sub> monitoring 📕 Trauma – Head Trauma 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 peds Tourniquet use should not be Normal Saline bolus IV/IO delayed until a patient is in shock or Use pediatric tape and refer to dosing guide is clearly exsanguinating. It should be Repeat to age dependent goal SBP applied early and can be used safely May repeat as long as criteria above exists without risk of patient injury. Do not wait; apply often and tighten if For Adults, consider needed. Ondansetron For peds patients  $\geq$  4 years, consider Ondansetron Use pediatric tape and refer to dosing guide In the absence of head trauma, age-specific Notify receiving facility. hypotension, poor perfusion or AMS **Contact Base Hospital for** Consider, Acetaminophen or Fentanyl for medical direction pain control



## Treatment Protocol T(

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#### Pearls

- Prevention and reversal of hypothermia associated with shock from severe traumatic injury is critical. Apply blankets early and consider activation of heater in the patient compartment of the ambulance.
- 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</p>
  - Infant: < 70mmHg or weak pulses</p>
  - I-10 years: < 70mmHg + (age in years x2)</p>
  - Over 10 years: <80mmHg</p>
  - Over 65 years: <110mmHg</p>
- 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 EtCO<sub>2</sub> 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.

#### SAN MATEO COUNTY HEALTH EMERGENCY MEDICAL SERVICES

