

**SECTION: T-1**

**PROTOCOL TITLE: GENERAL TRAUMA CARE**

**REVISED: June 8, 2010**

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**GENERAL COMMENTS:** When possible this protocol should supplement other, more specific protocols based on clinical assessments and judgment. While not specifically mentioned below, aggressive management of the airway, respiratory functions, and prevention of shock are cornerstones of solid trauma care. In addition, rapid transport, good scene management with minimized scene times, and coordination with receiving trauma center are also important.

### **BLS SPECIFIC CARE:**

- Basic BLS care and assessments and v/s every 15 minutes unless unstable, then reassess and v/s every 5 minutes
- Patients with respiratory related complaints in the setting of major trauma should receive high flow oxygen, regardless of oxygen saturation. Assist ventilations as needed
- Open injuries to the neck, chest, upper abdomen or deep vascular structures should be covered with an occlusive dressing when possible
- Follow *Selective Spinal Immobilization* protocol in regard to spinal care  
*When in doubt, immobilize*
- Suspected head injury: Elevate head/backboard as feasible (20-30 degrees max)
- Coordinate resources to insure prompt arrival of ALS care to the patient. Update responding ALS and receiving hospital as needed
- Pregnant trauma patients: Transport in left lateral recumbent, or tilt backboard as needed
- Follow *Hospital Destination Protocol (G-3)*
- Maintain patent airway as necessary
- Full spinal immobilization per protocol
- Supplemental high flow oxygen as tolerated
- Assist ventilations if necessary to maintain adequate SpO<sub>2</sub>
- Apply occlusive dressings to sucking chest wounds
  - o Seal on three sides
- Apply pressure dressings to hemorrhaging injuries
- Apply tourniquet to hemorrhaging extremity injuries unresponsive to pressure dressings
- Stabilize impaled objects and leave in place
- Obtain a full set of vital signs
- Assess blood glucose level as indicated
- Elevate head of bed/backboard if head injury present/suspected

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- Splint extremity injuries as needed
  - o Traction (Sager) splint as needed for fractures to the proximal third and mid-shaft of femur
  - o Splints, sling and swath, etc., where applicable, for other long-bone fractures and joint dislocations
- Assess neuromuscular function **before and after** splinting
- Position patient as appropriate
  - o Transport pregnant trauma patients in left lateral recumbent position at approximately 30°
- Conserve body heat. Maintain patent airway as necessary

#### ILS SPECIFIC CARE:

- IV access only if needed due to severity of underlying injury or illness, otherwise defer until arrival of ALS providers. 2 IV lines for major trauma.
  - IV: 200-500 cc crystalloid solution for symptomatic hypotension. Repeat PRN
  - Use with caution in patients with Hx of CHF

#### ALS SPECIFIC CARE:

- *Assess and identify causes of complaints, treat as needed*
- *Airway Management:* Secure the airway using means best determined by good clinical decision making. See "Medication Assisted Intubation" guidelines for current and anticipated clinical needs
- *Suspected Tension Pneumothorax*
  - Needle chest decompression
- *Ocular Trauma*
  - Tetracaine 1-3 gtts (hold for penetrating or open globe injury)

#### *Anticonvulsant therapy*

- Valium (diazepam)
  - ♦ Adult:
    - IV/IO: 2-10 mg every 5-10 minutes as needed to a maximum of 20 mg
  - ♦ Pediatric:
    - IV/IO: 0.1-0.2 mg/kg every 5 minutes as needed to a maximum total dose of 10 mg
    - PR: 0.5 mg/kg every 5 minutes as needed to a maximum total dose of 10 mg

- Versed (midazolam)
  - ♦ Adult:
    - IV/IO: 0.5-2.5 mg every 5-10 minutes as needed to a maximum of 5 mg
    - IN (intranasal): 5mg (2.5 mg each nare) to a maximum total dose 5 mg
    - IM: 5mg to maximum dose 5 mg
  - ♦ Pediatric:
    - IV/IO/IM: 0.05-0.2 mg/kg every 5-10 minutes as needed to a maximum total dose of 5 mg
    - IN/PR: 0.2-0.4 mg/kg every 5 minutes as needed to a maximum total dose of 5 mg

### *Analgesics and Sedatives*

#### *Analgesics*

Discontinue or do not administer if:

- Systolic BP < 90 mmHg. (Adult)
- Signs and symptoms of hypoperfusion are present or develop
- Respiratory rate, SpO<sub>2</sub> and/or mental status diminishes
- Contact OLMC to exceed maximum doses

- Fentanyl:
  - ♦ Adult: 25-50 mcg IV/IO/IN/IM every 5-10 minutes as needed to a maximum of 200 mcg
  - ♦ Pediatric: 1 mcg/kg slowly every 5-10 minutes as needed to a maximum total dose 100 mcg
- Morphine:
  - ♦ Adult: 2-5 mg IV/IO/IN/IM every 5-10 minutes as needed to maximum of 20 mg
  - ♦ Pediatric:
    - IV/IO: 0.1-0.2 mg/kg every 5-10 minutes as needed
    - IM: 0.2 mg/kg every 20 minutes as needed
    - Maximum dose 15 mg

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### PHYSICIAN PEARLS:

**Trauma patients:** All patients shall be stabilized and transported as rapidly and efficiently as possible. Trauma patients and patients who may benefit from specific interventional therapy (surgery, thrombolytic, cath lab) should have a goal of less than ten minutes on scene, within the bounds of quality patient care. The following groups of patients (while not all inclusive) should be considered high risk for rapid deterioration due to significant mechanism of injury:

- Penetrating wounds to head, neck, chest, back, or abdomen, or other vital structures
- Pedestrians struck by a vehicle
- Falls greater than 10 feet or twice the patient's height
- MVA with significant damage to vehicle
- MVA with rollover, patient entrapment or ejection
- Evidence of significant blunt force (starred windshield, deformed dash, steering wheel, fractured safety equipment) etc.
- Death of another occupant in same vehicle
- Motorcycle/ATV/Snowmobile accidents
- Horse rollovers

**EARLY NOTIFICATION OF THE RECEIVING FACILITY IS  
ESSENTIAL IN SIGNIFICANT TRAUMA CASES**