Mental Status and Vital Signs

Trauma Center transport with early notification

Injury Patterns

- Penetrating injuries to the head, neck, torso, and proximal extremities
- Skull deformity or suspected skull fracture
- Suspected spinal injury with new motor or sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of two or more proximal long bones
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Active bleeding requiring a tourniquet or wound packing with continuous pressure

Mental Status and Vital Signs

All Patients

- Unable to follow commands (motor GCS < 6)
- RR < 10 or > 29 breaths/ min
- Respiratory distress or in need of respiratory support
- Room air \( \text{SpO}_2 \) < 90%

Age 0 – 9 years

- SBP < 70 mmHg + 2x age in years

Age 10 – 64 years

- SBP < 90 mmHg or
- HR > SBP

Age 65 years or older

- SBP < 110 mmHg or
- HR > SBP

Mechanism of Injury

- High risk auto crash
  - Partial or complete ejection
  - Significant intrusion (including roof)
  - > 12 inches at occupant site OR
  - > 18 inches at any site OR
  - Need for extrication for entrapped patient
- Death in passenger compartment
- Child (0 – 9 years) unrestrained or in unsecured child safety seat
- Vehicle telemetry data consistent with severe injury
- Rider separated from transport vehicle with severe impact (e.g., motorcycle, ATV, horse, etc.)
- Pedestrian/ bicycle rider thrown, run over, or with significant impact
- Fall from height > 10 feet (all ages)

EMS Judgement

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head injury
- Anticoagulant use
- Susicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma

If concerned, contact Trauma Base Hospital

Contact Trauma Base Hospital for destination
Pearls
• Do not let alcohol confuse the clinical picture. Persons using alcohol may have unrecognized injuries, particularly head bleeds.
• A complete hands on head-to-toe assessment is required for all trauma patients.
• Transport should be initiated within 10 minutes of ambulance arrival unless patient requires extrication.

Age Categories
Adult Patient – Trauma patients 15 years of age and older.
Pediatric Patients – Trauma patients under the age of 15 years.

Trauma Receiving Facilities
Adult Trauma Center catchment areas:
• Stanford Hospital – Any area south of and including Devil’s Slide; City of Millbrae south of Trousdale Drive between I-280 and El Camino Real; and south of Millbrae Avenue between El Camino Real and the San Francisco Bay.
• Zuckerberg San Francisco General Hospital – Any area north of Devil’s Slide; City of Millbrae north of Trousdale Drive between I-280 and El Camino Real; and north of Millbrae Avenue between El Camino Real and the San Francisco Bay. Includes San Francisco International Airport.
• Eden Medical Center – Eastbound on the San Mateo or Dumbarton Bridges.

 Pediatric Trauma Center catchment areas:
• Stanford Hospital – All patients ≤ 6 years or any area south of and including Devil’s Slide; City of Millbrae south of Trousdale Drive between I-280 and El Camino Real; and south of Millbrae Avenue between El Camino Real and the San Francisco Bay.
• Zuckerberg San Francisco General Hospital – All patients > 6 years and any area north of Devil’s Slide; City of Millbrae north of Trousdale Drive between I-280 and El Camino Real; and north of Millbrae Avenue between El Camino Real and the San Francisco Bay. Includes San Francisco International Airport.

Receiving Facilities – Local hospitals that are not trauma receiving facilities are destinations for patients who are triaged by the Base Hospital at the time of report as not requiring trauma center care. A trauma receiving facility may also serve as the receiving facility when it is the patient’s facility of choice.

Low Energy Mechanism Trauma
Low energy mechanism trauma may not obviously reveal significant trauma. Examples include, but are not limited to ground level or short falls, blunt assault without a weapon (e.g., closed fist), low speed motor vehicle crash, or other blunt trauma (e.g., sports injury). Symptoms or concern may include:
• Symptoms in the presence of head injury such as headache, vomiting, loss of consciousness, repetitive questioning, abnormal, or combative behavior or new onset of confusion
• Pain level greater than 5/10 related to head, neck, or torso injury
• Any concerns due to hypotension, tachycardia, or tachypnea
• Systolic BP < 110mmHg in patients 65 years of age or older
• Torso injury with tenderness of abdomen, chest/ribs or back/flank
• Suspected hip dislocation or pelvis injury

Other Definitions
Unmanageable Airway – A patient whose airway is unable to be adequately maintained with BLS or ALS maneuvers. All trauma patients are candidates for immediate redirection to the trauma center following airway stabilization at a non-trauma receiving facility.