

# Trauma Triage

Scene time goal is 10 minutes

## ACTIVATION



Traumatic arrest?



 Traumatic Arrest

Unmanagable airway?

Transport to closest facility to secure airway

### Measure vital signs and level of consciousness

1

GCS $\leq$ 13
Systolic blood pressure $<$ 90mmHg $\leq$ 6 years old SBP $<$ 60 mmHg
Adult respiratory rate $<$ 10 or $>$ 29 <u>or</u> need for ventilatory support
Infant ( $<$ 1 year of age) respiratory rate $<$ 20



Trauma Center transport with early notification

### Assess anatomy of injury

2

All gunshot wounds	Open or depressed skull deformity
Chest wall instability or deformity (e.g., flail chest)	Traumatic paralysis or paresthesia
Two or more proximal long bone fractures	Combination of trauma with burns
Crushed, degloved, mangled, or pulseless extremity	
Amputation above the wrist or ankle	
Penetrating injuries to head, neck, torso, groin and extremities proximal to elbow and knee	
Pelvic fractures	



Trauma Center transport with early notification

### Assess mechanism of injury and evidence of high-energy impact

3

Adult fall $>$ 20 feet	Auto-pedestrian/auto-bicycle/motorcycle Separated from, thrown or run over Obvious injury Complaint of pain or injury
Pediatric fall $>$ 10 feet <u>or</u> 2 times height of child	Significant blunt trauma to head/torso from large animal (i.e. kick/fall from horse)
High risk auto crash: Death in same vehicle Ejection (partial or complete) Extrication $>$ 20 minutes Vehicle telemetry data confer high risk Intrusion on patient side or roof $>$ 12 inches <u>or</u> $>$ 18 inches at any site	



Trauma Center transport with early notification

Adult and Pediatric Trauma Treatment Protocols



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**For other situations not described below, consider Trauma Base Hospital contact if paramedic has concern that a serious injury may exist**

### Risk Factor Advisory

Patients who do not meet Box 1-3 criteria may still be prone to seriously injury, specifically if they have one or more of the following risk factors:

- Pregnancy over 20 weeks
- Communication barrier (e.g., age, language, psychiatric, or developmental issues)
- Age 55 or older
- Patient taking anticoagulants or with known bleeding disorder
- Patient with co-morbidity factors
- Central nervous system changes
- Time sensitive injuries

**4**

Motor vehicle crash

- Estimated impact speed of > 40mph
- Mechanical extrication required by fire department personnel
- Rollover with unrestrained occupant

Person struck by a vehicle at < 20mph

Person ejected/fell from other object (e.g., motorcycle, horse, or ATV)

Blunt assault with weapon (e.g., pipe, bat, or golf club)

Falls > 10 but < 20 feet

*This list is not all-inclusive and other high energy mechanisms encountered also merit Trauma Base Hospital contact*



Trauma Center transport with early notification



Transport to hospital of patient choice



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## 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  $\leq 6$  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  $< 110$ mmHg 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.

