Adult/Pediatric Trauma Triage

PURPOSE

These guidelines were developed to assist the emergency responder to determine what constitutes a trauma patient and where to transport the trauma patient. The goal of any trauma patient assessment and transportation guideline is to facilitate delivery of the patient to the most appropriate level of care in the most expeditious manner.

This protocol applies to all patients who are seriously injured or potentially seriously injured. The criteria listed below serve to identify the injured patients who are likely to require comprehensive trauma care. An ADULT trauma patient is defined as an injured patient (age 15 or greater) who meets any of the following criteria or when in the judgment of EMS personnel, evidence for potential serious injury exists. A PEDIATRIC trauma patient is defined as an injured patient (age 14 years or younger) who meets any of the following criteria or when in the judgment of EMS personnel, evidence for potential serious injury exists. These guidelines are meant to supplement, but not replace, the judgment of the EMS personnel at the scene.

TRAUMA TRIAGE DESTINATION DECISIONS

Any ADULT trauma patient meeting the Physiologic or Anatomic criteria should be transported to the closest appropriate Level 1 or Level 2 trauma center if within 45 minutes, otherwise transport to an appropriate Level 3 (preferred) or Level 4 trauma center if the patient can arrive within 45 minutes.

Any PEDIATRIC trauma patient meeting the Physiologic or Anatomic criteria should be transported to the closest appropriate Level 1 or Level 2 PEDIATRIC trauma center if within 45 minutes, otherwise transport to an appropriate Level 1 or Level 2 adult trauma center if the patient can arrive within 45 minutes, otherwise transport to an appropriate Level 3 (preferred) or Level 4 trauma center if the patient can arrive within 45 minutes. If none of these are available transport to the closest facility. Appropriate centers are determined by the Medical Control Authority as indicated in the Trauma Triage Supplement. Notify the trauma center as soon as possible, including inclusion criteria and ETA.

PHYSIOLOGIC CRITERIA

Vital signs & level of consciousness

- Glasgow Coma Scale <14

- Systolic Blood Pressure <90 mm Hg

- Respiratory Rate <10 or >29 breaths per minute, or need for ventilatory support
ANATOMIC CRITERIA

Anatomy of injury

- All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g. flail chest)
- Two or more proximal long bone fractures (femur and or humerus)
- Crush, degloved, mangled or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fracture
- Open or depressed skull fracture
- Paralysis

Any ADULT trauma patient meeting the Mechanism of Injury or Special Considerations criteria should be transported to the closest appropriate Level 1, Level 2 or Level 3 trauma center if within 45 minutes, otherwise transport to an appropriate Level 4 trauma center if the patient can arrive within 45 minutes. Any PEDIATRIC trauma patient meeting the Mechanism of Injury or Special Considerations criteria should be transported to the closest appropriate Level 1 or Level 2 trauma center if within 45 minutes, otherwise transport to an appropriate Level 1, 2 or 3 adult trauma center if the patient can arrive within 45 minutes, otherwise transport to an appropriate Level 4 adult trauma center if the patient can arrive within 45 minutes. If none of these are available, transport to the closest facility. Appropriate centers are determined by the Medical Control Authority as indicated in the Trauma Triage Supplement. Notify the trauma center as soon as possible, including inclusion criteria and ETA.

MECHANISM OF INJURY

Mechanism and evidence of high-energy impact - Falls

- ADULT >20 feet (one story is equal to 10 ft.)
- PEDIATRIC >10 feet (one story is equal to 10 ft.) or two or three times

Height of the child

- High-risk auto crash
- Intrusion, including roof: > 12 in. occupant site; >18 in. any site
- Ejection (partial or complete) from automobile
- Death in same passenger compartment
- Vehicle telemetry data consistent with a high risk injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- Motorcycle/Recreational Vehicle crash >20 mph

SPECIAL CONSIDERATIONS

Special patient or system considerations

- Older Adults
  - Risk of injury/death increases after age 55
  - SBP < 110 mmHg may represent shock after age 65
  - Low impact mechanisms (e.g. Ground level falls) may result in severe injury

- Children
  Should be triaged preferentially to pediatric capable trauma centers

- Anticoagulation and bleeding disorders

Patients with head injury are at high risk for rapid deterioration

- Burns

Without other trauma mechanism: triage to bum facility with trauma mechanism: triage to trauma center

- Pregnancy >20 weeks

- Any other injuries felt by EMS personnel to require specialized trauma care

Exception to these triage guidelines is made for trauma patients requiring airway intervention that cannot be accomplished by pre-hospital personnel. These patients will be transported to closest appropriate hospital to allow for airway management, stabilization and subsequent transfer.

NOTES

1. Medical Control may be contacted to determine the appropriate destination when indicated.
2. Helicopter transport should be considered for patients meeting the trauma inclusion criteria and who have a projected ground transport time to the trauma center is greater than 45 minutes.
Measure Vital signs and level of consciousness:
- Glasgow Coma Scale < 14
- Systolic Blood Pressure (mmHg) < 90 mmHg
- Respiratory Rate < 10 or > 29 breaths per minute, or need for ventilatory support (<20 in infants aged <1 year)

Assess anatomy of injury:
- All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability of deformity
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fracture
- Open or depressed skull fracture
- Paralysis

Assess mechanism of injury and evidence of high-energy impact:
- Falls
  - Adults: > 20 feet (one story is equal to 10 feet)
  - Children: > 10 feet or two or three times the height of the child
- High-risk auto crash
  - Intrusion, including roof: > 12 inches occupant site; > 18 inches any site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with a high risk of injury
- Auto vs Pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- Motorcycle/Recreational Vehicle crash > 20 mph

Assess special patient or system considerations:
- Older Adults
  - Risk of injury/death increases after 55 years
  - SBP < 110 may represent shock after age 65
  - Low impact mechanisms (e.g. ground level falls) may result in severe injury
- Children
  - Should be triaged preferentially to pediatric capable trauma centers
- Anticoagulants and bleeding disorders
  - Patients with head injury are at high risk for rapid deterioration
- Burns
  - Without other trauma mechanism: triage to burn facility
  - With trauma mechanism: triage to trauma center
- Pregnancy > 20 weeks
- EMS provider judgement

Transport to a trauma center.
Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system (level 1 or 2).

Transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center.

Transport to a trauma center, or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.

TRANSPORT ACCORDING TO PROTOCOL

When in doubt, transport to a trauma center