## Arizona Guidelines for Field Triage of Injured Patients

### Field Triage Decision Scheme

**Measure vital signs and level of consciousness**

**Step One**

<table>
<thead>
<tr>
<th>Glasgow Coma Scale</th>
<th>&lt;14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic blood pressure</td>
<td>&lt;90 mmHg</td>
</tr>
<tr>
<td>Respiratory rate</td>
<td>&lt;10 or &gt;29 breaths per minute (&lt;20 in infant aged &lt; one year¹)</td>
</tr>
</tbody>
</table>

**Transport to a Trauma Center².** 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 trauma system.

**Assess anatomy of injury.**

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee
- Flail chest
- Two or more proximal long-bone fractures
- Crushed, degloved or mangled extremity
- Amputation proximal to wrist and ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

**Step Two³**

**Transport to a Trauma Center².** 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 trauma system.

**Assess mechanism of injury and evidence of high-energy impact.**

- Falls
  - Adults: >20 feet (one story is equal to 10 feet)
  - Children⁴: >10 feet or two or three times the height of the child
- High-risk auto crash
  - Intrusion⁵: >12 inches, occupant site; >18 inches, any site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with high risk of injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact⁶
- Motorcycle crash >20 mph

**Step Three⁵**

**Transport to closest appropriate Trauma Center⁷ which, depending on the trauma system, need not be the highest level trauma center.**

**Assess special patient or system considerations.**

- Age
  - Older Adults⁸: Risk of injury/death increases after age 55 years
  - Children: Should be triaged preferentially to pediatric-capable trauma centers
- Anticoagulation and bleeding disorders
- Burns
  - Without other trauma mechanism: Triage to burn facility⁹
  - With trauma mechanism: Triage to trauma center
- Time sensitive extremity injury¹⁰
- End-stage renal disease requiring dialysis
- Pregnancy >20 weeks
- EMS¹¹ provider judgment

**Step Four**

**Contact medical control and consider transport to trauma center or a specific resource hospital¹³.**

**Transport according to protocol.¹²**

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1. Systolic blood pressure <90 mmHg
2. 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 trauma system.
3. Assess mechanism of injury and evidence of high-energy impact.
4. Children: >10 feet or two or three times the height of the child
5. Steps 3 and 4 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the trauma system.
6. Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
7. Transport to closest appropriate Trauma Center which, depending on the trauma system, need not be the highest level trauma center.
8. Older Adults: Risk of injury/death increases after age 55 years
9. Triage to burn facility
10. Triage to trauma center
11. EMS provider judgment
12. Transport according to protocol
13. Contact medical control and consider transport to trauma center or a specific resource hospital
FIELD TRIAGE SCHEME FOOTNOTES

1. The upper limit of respiratory rate in infants is >29 breaths per minute to maintain a higher level of over-triage for infants.

2. Trauma centers are designated Level I-IV, with Level I representing the highest level of trauma care available.

3. Any injury noted in Step Two or Step Three triggers a “YES” response.

4. Age <15 years.

5. Intrusion refers to interior compartment intrusion, as opposed to deformation which refers to exterior damage.

6. Includes pedestrians or bicyclists thrown or run over by a motor vehicle or those with estimated impact >20 mph with a motor vehicle.

7. Local or regional protocols should be used to determine the most appropriate level of trauma center; appropriate center need not be Level I.

8. Age >55 years.

9. Patients with both burns and concomitant trauma for whom the burn injury poses the greatest risk for morbidity and mortality should be transferred to a burn center. If the non-burn trauma presents a greater immediate risk, the patient may be stabilized in a trauma center and then transferred to a burn center.

10. Injuries such as an open fracture or fracture with neurovascular compromise.

11. Emergency medical services.

12. Patients who do not meet any of the triage criteria in Steps One through Four should be transported to the most appropriate medical facility as outlined in local EMS protocols.

13. In most circumstances patients undergoing CPR should not be transported by Air Ambulance.

ARIZONA TRAUMA MODE OF TRANSPORT GUIDELINE

The decision for mode of transport for both field and inter-facility trauma patients is based on the premise that the time to definitive care and quality of care are critical to achieving optimal outcomes. Factors of distance, injury severity, road conditions, and traffic patterns must be considered when choosing between air or ground transport. The skill level of the transport team must also be considered.

When considering air transport, the amount of time saved should be significant enough to allow a potentially beneficial intervention to take place at the receiving facility. Time considerations should take into account arranging for air transport, patient packaging, transport to the aircraft and transport of the patient from the helipad or airport to the trauma bay. The referring physician will collaborate with the receiving physician and transport service providers to determine the appropriate mode of transport, based on the patient’s condition, and the above mentioned factors.

The potential benefit to the patient should outweigh the risk associated with Air Ambulance transport

INTER-FACILITY TRAUMA TRANSPORTS

Background: Trauma transports from one hospital to another for a higher level of care typically fall into one of two broad types:

- Those in which a quicker form of transport may make a difference in treatment/outcome.
- Those in which a quicker form of transport may not make a difference in treatment/outcome.

Assumptions: Assumptions for the purposes of these examples:

- Helicopter transport will be quicker, but more expensive.
- There are no weather or road issues that would make air transport preferable to ground transport or ground transport preferable to air transport.

Examples: (Not intended to cover all potential circumstances)

<table>
<thead>
<tr>
<th>Quicker Form Of Transport (Helicopter) – May Make A Difference In Outcome</th>
<th>Quicker Form Of Transport (Helicopter) – May Not Make A Difference In Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient with a suspected aortic injury as seen on chest X-ray or CT scan.</td>
<td>1. Patient with 2 broken ribs, no pneumothorax and who is breathing fine.</td>
</tr>
<tr>
<td>3. Patient with a Glasgow Coma Scale (GCS) less than 12 and the GCS is decreasing.</td>
<td>3. Patient with a concussion and normal CT scan of the brain; or if no CT, then a GCS of 15 and mentating appropriately.</td>
</tr>
<tr>
<td>4. Patient with a stab wound to the abdomen near the upper right abdomen.</td>
<td>4. Stab wound to the arm with decreased sensation but normal pulses, no “tightness”, and no significant on-going blood loss.</td>
</tr>
<tr>
<td>5. Patient with a gun shot wound to the thigh with decreased pulses.</td>
<td>5. Patient with gun shot wound to the thigh with excellent pulses, no expanding thigh, and no significant on-going blood loss.</td>
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<tr>
<td>6. Patient with blunt trauma and signs of shock.</td>
<td></td>
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</tbody>
</table>

Adopted by the Arizona State Trauma Advisory Board, January 21, 2010