

Indiana Trauma Transfer Guideline

Purpose: Trauma patients who will be transferred out of this facility to a definitive care facility emergently must be identified early, assessed and treated quickly and transferred efficiently in order to provide them the best possible outcome.

Policy: Patients to be transferred can often be identified before they arrive in the emergency department. Arrangements for emergent transfer can often begin the moment the emergency department staff is notified by EMS that they are en-route with a major trauma patient. Other patients may require evaluation by the emergency department physician before the decision to transfer is made.

Once the decision to transfer has been made, it should not be delayed to obtain X rays, CT scans or laboratory results that do not immediately impact the resuscitation. At this point, the focus of the emergency department staff is on resuscitation and stabilization with the goal of minimizing the patient's length of stay in the emergency department.

Consideration should be given to whether the patient will be transferred via ground or air. Generally, seriously injured trauma patients should be transferred by air when possible. Consideration should be given to ground transport if the patient can be received by the definitive care facility sooner than if transported by air or if aero medical transfer is significantly delayed or unavailable for any reason. Transport vehicles should be staffed by paramedics and/or nurses whenever possible.

Trauma patients on whom invasive procedures have been performed or who have received medications must be transferred under the care of personnel who are adequately trained to manage their resulting condition. If necessary, a physician or nurse from this hospital may accompany the patient.

The following are conditions that may require activation emergency transfer procedures depending on the resources:

- Central Nervous System
 - Penetrating injury/open fracture with or without cerebrospinal fluid leak
 - Depressed skull fracture
 - GCS < 11 or deteriorating mental status or lateralizing neurological signs
 - Spinal cord injury or major vertebral injury
- Chest
 - Major chest wall injury or pulmonary contusion
 - Wide mediastinum or other signs suggesting great vessel injury
 - Cardiac injury
- Pelvis/Abdomen
 - Pelvic fracture with shock or other evidences of continuing hemorrhage
 - Open pelvic injury
 - Unstable pelvic ring disruption
 - Major abdominal vascular injury
- Major Extremity Injuries
 - Fracture/dislocation with loss of distal pulses

- Multiple-System Injury
 - Head injury combined with face, chest, abdominal, or pelvic injury
 - Burns with associated injuries
- Secondary Deterioration (Late Sequelae)
 - Single or multiple organ system failure (deterioration in central nervous, cardiac, pulmonary, hepatic, renal, or coagulation systems)
 - Major tissue necrosis

The following are conditions that may require activation emergency transfer procedures depending on the resources:

- Central Nervous System
 - GCS > 10 and <14
- Chest
 - Patients who may require prolonged ventilation
 - >2 unilateral rib fractures
- Abdomen
 - Solid organ injury
- Major Extremity Injuries
 - Open long-bone fractures
 - Extremity ischemia
 - Multiple long-bone fractures
- Multiple-System Injury
 - Injury to more than two body regions
- Co-morbid Factors
 - Age >55 years
 - Children ≤ 5 years of age
 - Cardiac or respiratory disease
 - Insulin-dependent diabetes
 - Morbid obesity
 - Pregnancy
 - Immunosuppression
- Secondary Deterioration (Late Sequelae)
 - Mechanical ventilation required
 - Sepsis

The Criteria for Consideration of Transfer from Level III Centers to Level I or II Center:

- Carotid or vertebral arterial injury.
- Torn thoracic aorta or great vessel.
- Cardiac rupture.
- Bilateral pulmonary contusion with Pao₂:Flo₂ ratio less than 200.
- Major abdominal vascular injury.
- Grade IV or V liver injuries requiring transfusion of more than 6 U of red blood cells in 6 hours.
- Unstable pelvic fracture requiring transfusion of more than 6 U of red blood cells in 6 hours.

- Fracture or dislocation with loss of distal pulses.
- Penetrating injuries or open fracture of the skull.
- Glasgow Coma Scale score of less than 14 or lateralizing.
- Spinal fracture or spinal cord deficit.
- Complex pelvis/acetabulum fractures.
- More than two unilateral rib fractures or bilateral rib fractures with pulmonary contusion (if no critical care consultation is available).
- Significant torso injury with advanced comorbid disease (such as coronary artery disease, chronic obstructive pulmonary).

Procedure:

Before patient arrival:

1. After becoming aware that a trauma patient is en route who likely will require emergent transfer, the emergency department staff activates the trauma team and notifies the emergency department physician of the likelihood of transfer. Ascertain from EMS if they have already ordered aero medical transportation.
2. The physician identifies the appropriate mode of transfer (i.e., aero medical vs. ground) and qualifications of transferring personnel.
3. HUC contacts the appropriate aero medical and/or ground transportation, obtains ETA:
 - [INSERT CONTACT INFORMATION]
 - [INSERT CONTACT INFORMATION]
 - [INSERT CONTACT INFORMATION]

After patient arrival:

1. The physician identifies and contacts the receiving facility, and requests the receiving physician to accept the transfer. The two should discuss the current physiological status of the patient and the optimal timing of transfer.
2. Before transfer, the physician should:
 - Ensure chest tubes are placed in the presence of pneumothorax.
 - Ensure at least two IV lines are established.
 - Consider securing the airway with an endotracheal tube, LMA or surgical airway if GCS <11.
 - Consider sending additional blood, equipment and supplies (medications, fluids, etc.) that the patient may
 - Consider securing the airway with an endotracheal tube, LMA or surgical airway if GCS <11.
3. The HUC copies of all available documentation to accompany the patient:
 - EMS report
 - Resuscitation record
 - X rays, CT scans
 - Lab results