

Model Trauma Transfer Process

Purpose:

Trauma patients who will be transferred to a Level I or Level II trauma center must be identified and rapidly assessed, treated quickly and transferred efficiently to provide the best possible outcome. See Trauma Transfer Activation Conditions, page 2, and Criteria for Transfer Considerations, page 4.

General Principles:

1. The majority of injured patients receive their trauma care at a local trauma facility and transfer to a higher level of care is not necessary.
2. Physicians should assess their capabilities and the capabilities of their hospital. This assessment affords an early determination of which patients can be cared for locally or those who require transfer to a higher level trauma facility.
3. Once the need to transfer has been determined, the transfer process should be expedited without delay for diagnostic procedures that will not change the immediate plan of care.
4. When possible, stabilize life-threatening injuries at the local hospital before transporting. This treatment may include operative intervention to ensure that the patient is in the best possible condition for transfer. Intervention prior to transfer is a surgical decision.

(Adopted from Interfacility Transfer of Injured Patients: Guidelines for Rural Communities; American College of Surgeons, Committee on Trauma 2002)

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 is notified by EMS that they are en route with a major trauma patient. Some trauma patients may arrive at the hospital by private vehicle or walk-in. All trauma patients will receive a medical screening examination and stabilizing treatment, within the hospital's capabilities, before the transfer is made.

Once the decision to transfer has been made, transfer 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 is on resuscitation and stabilization with the goal of minimizing the patient's length of stay at this facility.

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 air 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 the transferring hospital may accompany the patient.

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Trauma Transfer Activation Conditions

The following are conditions that should immediately activate emergency transfer procedures:

- Central Nervous System
 - Penetrating injury/open fracture with or without cerebrospinal fluid leak
 - Depressed skull fracture
 - GCS <14 or deteriorating mental status or lateralizing neurological signs
 - Spinal fracture, spinal cord injury or major vertebral injury
- Circulatory System
 - Carotid or vertebral arterial injury
 - Torn thoracic aorta or great vessel
 - Cardiac rupture
- Chest
 - Major chest wall injury
 - Bilateral pulmonary contusion with Pao₂:Flo₂ ratio less than 200.
 - Wide mediastinum or other signs suggesting great vessel injury
 - Cardiac injury
 - More than two unilateral rib fractures or bilateral rib fractures with pulmonary contusion (if no critical care consultation is available).
- Pelvis/Abdomen
 - Pelvic fracture with shock or other evidences of continuing hemorrhage
 - Open pelvic injury
 - Unstable pelvic fracture requiring transfusion of more than 6 U of red blood cells in 6 hours
 - Major abdominal vascular injury
 - Grade IV or V liver injuries requiring transfusion of more than 6 U of red blood cells in 6 hours
 - Complex pelvis/acetabulum fractures.
- 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
 - Significant torso injury with advanced comorbid disease (such as coronary artery disease, chronic obstructive pulmonary).
- Secondary Deterioration (Late Sequelae)
 - Single or multiple organ system failure (deterioration in central nervous, cardiac, pulmonary, hepatic, renal, or coagulation systems)
 - Major tissue necrosis
 - Prolonged mechanical ventilation required
- Co-morbid Factors
 - Age >55 years
 - Children ≤ 15 years of age
 - Cardiac or respiratory disease
 - Insulin-dependent diabetes
 - Morbid obesity
 - Pregnancy
 - Immunosuppression

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Trauma Transfer Procedure:

Before patient arrival by EMS:

1. After becoming aware of an incoming trauma patient that will likely require 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 air medical transportation.
2. The physician identifies the appropriate mode of transfer (i.e., air medical vs. ground) and the required qualifications of transferring EMS personnel.
3. Contact the appropriate air medical and/or ground transportation service, obtain ETA.

After patient arrival (any arrival mode):

1. The physician completes steps 2 and 3 above.
2. 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.
3. 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 endotracheal tube or supraglottic airway if GCS <11.
 - Consider sending additional blood, equipment and supplies (medications, fluids, etc.) that the patient may need en route if not available in the transporting vehicle.
4. Prepare medical records and patient personal effects to accompany the patient. The following information shall include when appropriate (also see Checklist on page 4):
 - Patient name, address, hospital number, age
 - Name, address, phone number for next of kin
 - Patient's third party billing number
 - History/mechanism of injury
 - Condition on admission
 - Vital signs pre-hospital, during stay and at time of transfer
 - Treatment provided to the patient, including medications given and route
 - Laboratory and x-ray findings, including images if available
 - Fluids given by type and volume
 - Name, address of transferring physician and contact information
 - Name of physician at the receiving facility to whom the patient is to be transferred
 - Name of physician at the receiving facility who has been contacted about the transfer

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Criteria for Transfer Consideration*

Critical Injuries to **Level I or Level II** trauma center:

1. Carotid or vertebral arterial injury
2. Torn thoracic aorta or great vessel
3. Cardiac rupture
4. Bilateral pulmonary contusion with PaO₂ to FIO₂ ration less than 200
5. Major abdominal vascular injury
6. Grade IV or V liver injuries requiring >6 U RBC transfusion in 6 hours
7. Unstable pelvic fracture requiring >6 U RBC transfusion in 6 hours
8. Fracture or dislocation with loss of distal pulses
9. Penetrating injury or open fracture of the skull
10. Glasgow Coma Scale score <14 or lateralizing neurologic signs
11. Spinal fracture or spinal cord deficit
12. Complex pelvic/acetabulum fractures
13. >2 unilateral rib fractures or bilateral rib fractures with pulmonary contusion (if no critical care consultation is available)
14. Significant torso injury with advanced comorbid disease (such as coronary artery disease, chronic obstructive pulmonary disease)

NOTE: It may be appropriate for an injured patient to undergo operative control of ongoing hemorrhage before transfer if a qualified surgeon and operating room resources are promptly available at the referring hospital.

* Resources for Optimal Care of the Injured Patient 2014, Committee on Trauma, American College of Surgeons.

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Patient Transfer Checklist

- Patient Medical Records**
 - Patient name, address, hospital number, age
 - Name, address, phone number for next of kin
 - Patient's third party billing number
 - History/mechanism of injury
 - Condition on admission
 - Vital signs pre-hospital, during stay and at time of transfer
 - Approximate patient weight
 - Treatment provided to the patient, including medications given and route
 - Include weight used for medication calculations
 - Laboratory and x-ray findings, including films
 - Fluids given by type and volume
 - Name, address of transferring physician
 - Name of physician at the receiving facility to whom the patient is to be transferred
 - Name of physician at the receiving facility who has been contacted about the transfer
- Patient's Personal Effects**
- Copy of Patient's Informed Consent to Transfer Form**
- Copy of EMTALA Transfer Form**

Transferring Physician: _____

Receiving Facility: _____

Receiving Physician: _____

Date: _____

Time: _____