Preparing the Trauma Patient for Transfer

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Surgery School

DHMC
School for the Gifted
If you want a copy of this presentation

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Who
■ When
■ How
■ What
■ Where
Who to transfer?

- Institutional capabilities exceeded
- Lack of resources
- Lack of subspecialty care
- Lack of interest
- Patient specific factors
  - Age
  - Comorbidities
When?

- Decide EARLY!
  - Do not need COMPLETE diagnostic studies
- Benefits of early transfer
  - Match patient needs with resources earlier
  - Free up resources at smaller hospital
  - Easier to w/u patient at referral hospital when arrive early.
How?

- Dartmouth-Hitchcock Medical Center
  - 1-603-650-4600
  - 1-603-650-3222
- Fletcher-Allen Health Care
  - 1-800-639-2480
Speak with Trauma Attending at both institutions (NOT RESIDENTS)

All trauma patients transferred should go through the Trauma Attending
How?

- Air vs. Ground Transport
  - Weather (Air . . . and ground)
  - Time
  - Local vs. Hospital-based
  - Cost
Where

Level I Trauma Center
<table>
<thead>
<tr>
<th>Variable</th>
<th>Weighted No. of Patients</th>
<th>Death in Hospital</th>
<th>Death within 30 Days after Injury</th>
<th>Death within 90 Days after Injury</th>
<th>Death within 365 Days after Injury</th>
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</thead>
<tbody>
<tr>
<td>Overall population</td>
<td>15,009</td>
<td>7.6</td>
<td>7.6</td>
<td>8.7</td>
<td>10.4</td>
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<tr>
<td>Trauma center (%)</td>
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<tr>
<td>Non--trauma center (%)</td>
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<tr>
<td>Relative risk (95% CI)</td>
<td></td>
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<tr>
<td>Age &lt;55 yr</td>
<td>10,678</td>
<td>5.9</td>
<td>5.9</td>
<td>6.3</td>
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<td>Non-trauma center (%)</td>
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<tr>
<td>Relative risk (95% CI)</td>
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<td>Age ≥55 yr</td>
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<td>12.3</td>
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<td>Non-trauma center (%)</td>
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<tr>
<td>Relative risk (95% CI)</td>
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<tr>
<td>Maximal AIS score, ≤3</td>
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<td>2.6</td>
<td>2.7</td>
<td>4.8</td>
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<td>Non-trauma center (%)</td>
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<td>Relative risk (95% CI)</td>
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<td>9.9</td>
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<td>29.4</td>
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What
Time Critical Injuries

- Traumatic Brain Injuries
- Chest injuries – Aortic
- Abdominal – Instability
- Pelvic fracture – active hemorrhage
- Spinal instability
- Open Fractures
Head injury transferred to DHMC directly from crash scene
Neurosurgery wanted to obtain a CT angiogram of the Circle of Willis which was done less than 2 hours later.
What (to do prior to transfer)?
Airway

- Indications not always clear
- When in doubt, get control of the airway
  - Lower threshold for intubation prior to transport
- Some airway is better than none
- Beware of the Combitube
Breathing

- Physical examination
  - SQ emphysema
  - Symmetry of BS
    - Right main stem intubation
    - Pneumothorax / Collapse / Hemothorax

- ALL TRAUMA PATIENTS NEED A CXR PRIOR TO TRANSPORT!
Circulation

- Stop the bleeding
- Adequate IV access
  - Central line pressors
- Anticoagulation
  - FFP
- Hypovolemic shock
  - pRBC – FFP - Platelets
**Pitfall**

STOP the bleeding!

- Direct pressure
- Reduce pelvic volume
- Splint fractures

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- 45 yo MVC
- Awake, alert. Hemodynamically labile
- Pelvic fractures / Positive FAST scan
- BP 40 systolic on epinepherine
- OR at OSH for splenectomy
- Transferred with open abdomen
- Improving in our ICU

OPERATION PRIOR TO TRANSFER SAVED THIS PATIENT’S LIFE!
FAST Scan
Focused Abdominal Sonography for Trauma
Disability

- Head injury
  - Hypoxemia - ETT GCS < 8
  - Hypocarbia – cerebral vasoconstriction
  - Hypotension - < 90 S doubles mortality
- Early CT scanning
  - If does not delay transfer
Exposure / Environment

- Hypothermia
  - Standard Vital Sign
- Measurement
  - Temperature probe on foley catheter
Diagnostic Testing

- Will it change management?
- Will it delay transfer?
- Is it dangerous to the patient?
- Is the test done correctly
  - Abdominal /Chest CT
    - ALWAYS IV CONTRAST
    - NEVER oral contrast
EMTALA

“Emergency Medical Treatment and Active Labor Act

1. Medical screening examination
2. Treatment or transfer
3. Condition not stabilized
   No transfer unless:
   - Individual requests transfer
   - MD assessment of risk/benefit of transfer
4. Receiving hospital
   1. Available space/personnel
   2. Accepting physician
   3. Send records and diagnostics with patient
EMTALA leaves the transferring physician responsible for patients until they physically arrive at the receiving hospital.

EMTALA does not endorse the concept that:
- When a transport team from the receiving hospital arrives at the referring facility and assumes patient care, the patient is considered admitted to the receiving hospital and responsibility shifts to the receiving institution.
  - Implied or incorporated into transport agreements
  - NOTHING in EMTALA endorses this concept
Transferring physician is responsible under Federal laws for assuring that qualified personnel, with appropriate equipment, transfer the patient.

If optimal EMS staffing is not available the hospital bears the full responsibility for providing an adequate number of qualified providers to care for the patient during transport.
What About NH?

- Medical Control
  - DHART
    - Extension of DHMC (responsible for MC)
  - Local Ambulance
    - Local hospital (in general) responsible for MC

- Most of MC based on standing orders
Conclusion

- We want to help referring MD’s / Hospitals
  - IT IS WHAT TERTIARY CENTERS DO!
- Early decision for transport
- Limit non-essential diagnostics
- Call if questions regarding transfer / evaluation