

Rates and Risk Factors of Inter-hospital Transfer among U.S. Pediatric Major Trauma Patients

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Conflict of Interest Disclosure

I declare that I have no conflict of interest.

Background

RESOURCES FOR OPTIMAL CARE OF THE INJURED PATIENT



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Table 1

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

1. Carotid or vertebral arterial injury.
2. Torn thoracic aorta or great vessel.
3. Cardiac rupture.
4. Bilateral pulmonary contusion with $Pao_2:Flo_2$ ratio less than 200.
5. Major abdominal vascular injury.
6. Grade IV or V liver injuries requiring transfusion of more than 6 U of red blood cells in 6 hours.
7. Unstable pelvic fracture requiring transfusion of more than 6 U of red blood cells in 6 hours.
8. Fracture or dislocation with loss of distal pulses.
9. Penetrating injuries or open fracture of the skull.
10. Glasgow Coma Scale score of less than 14 or lateralizing.
11. Spinal fracture or spinal cord deficit.
12. Complex pelvis/acetabulum fractures.
13. More than two 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).



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Gaps

- Among pediatric major trauma patients meeting ACS-COT transfer criteria, the proportion of those who were transferred remains unknown.
- Risk factors associated with transfer status remain unknown.

Goals

- To examine the proportion of pediatric major trauma patients who met the ACS-COT transfer criteria were actually transferred.
- To identify potential risk factors that were associated with transfer status.

Methods & Results

Nationwide Emergency Department Sample, 2012

- Eligibility: age \leq 16, met ACS-COT transfer criteria or had an ISS $>$ 15
- **21,938** eligible patients (**92,335** nationally) were initially seen at nontrauma centers (NTCs) or level III trauma centers (TCs)

Results

Nationwide Emergency Department Sample, 2012

- Among **92,335** pediatric major trauma patients who were initially seen at NTCs or level III TCs

Only **12,280 (~13%)** were transferred.

Results

Transfer was less likely if

➤ **Age 12 to 16 years**

OR=0.53, 95% CI (0.47-0.59)

➤ **Covered by private insurance**

OR=0.57, 95% CI (0.34-0.95)

Results

Transfer was more likely if

- **Injury Severity Score (ISS)>15**
OR=8.76, 95% CI (7.32-10.48)
- **Treated at hospitals in the Midwest**
OR=2.06, 95% CI (1.48-2.86)
- **Treated at non-metropolitan hospitals**
OR=2.69, 95% CI (1.73-4.19)

Conclusions

- A significant proportion of pediatric major trauma patients who met ACS-COT transfer criteria were not transferred to trauma centers.
- Further research on the impact of failure to transfer on patient outcomes is warranted.

Thank You!

