Explaining Disparities in Field Triage of Older Adults: Factors that Influence EMS Destination Decisions and Reasons for Over- and Under-Triage

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Disclosures

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Background

- The Field Triage Decision Scheme (FTDS):
  - Four-tiered decision algorithm
    - Physiologic
    - Anatomic
    - Mechanism
    - Special Considerations
  - Designed to identify severely injured patients
  - Guide EMS providers in destination decisions
Background
- Age-based disparities exist in field triage
- Reasons for these disparities are unknown, but may be influenced by:
  - FTDS has lower sensitivity in older adults
  - Covert injuries and low-energy mechanisms influence EMS-perceived injury severity
  - Age bias
  - Continuity of care and patient preference

Study Aims
- We aimed to:
  1. Quantify the extent to which EMS destination decisions aligned with FTDS criteria
  2. Identify which FTDS criteria have higher under-triage percentages
  3. Explore EMS-provider identified reasons for under- and over-triage

Methods – Study Design
- Prospective multi-center study of injured EMS patients:
  - Age 55 and older
  - All injury severities
  - Sustained any mechanism of injury
Methods – Study Design

- Presented to one of four hospitals in Monroe County, NY
  - 1 ACS Verified Level I Trauma Center
  - 3 community hospitals
  - 9 county catchment
  - Patient population over 1 million
  - 85 EMS agencies

Methods – Data Sources

- Interview-based survey with EMS
  - Vital signs
  - Anatomic injuries
  - Mechanism of injury
  - Reason for destination decision
- Detailed medical record review
  - Diagnostic tests, imaging, surgeries, etc.
  - Disposition

Methods – Data Analysis

- Descriptive statistics
- Proportions were used to quantify:
  - Percentage of patients who met the FTDS
  - Percentage under- and over-triaged
  - Percentage of EMS provider endorsing specific reasons for destination decisions
  - Over-triage patients
  - Under-triage patients
Results

- 4,295 patients were recruited
- Mean age: 75 years (Range: 55-104)
- 60% female
- Most common mechanisms of injury:
  - Fall (75.3%)
  - Motor vehicle collisions (13.5%)

Results

- Under-Triage: 42.0%
- Over-Triage: 43.8%

Results

- Percentage of Patients Who Were Under-Triaged Among Patients Who Met Individual FTDS Criteria

  - Physiologic (n=375)
  - Anatomic (n=299)
  - Mechanism (n=83)

  - 41%
  - 47%
  - 2%
Results

EMS Cited Reasons for Destination Decision Among Over- and Under-Triaged Patients

Limitations

- Unable to make comparisons to the younger adult population
- Isolating driving force behind destination decisions is complicated when patients meet more than one step of the FTDS
- Potential for social desirability bias
- One geographic region

Conclusions

- Patients meeting the mechanism of injury criteria are less frequently under-triaged
- Patient preference plays a large role in destination decisions
- Future studies evaluating EMS provider decision-making practices may help to further understand triage practices
678 patients met FTDS criteria for transport to a trauma center.
Only Step 1: 318
Only Step 2: 239
Only Step 3: 54
Steps 1 and 2: 38
Steps 2 and 3: 7
Steps 1 and 3: 10
All Steps 1-3: 12

Results

ED Disposition Among Over- and Under-Triaged Patients

<table>
<thead>
<tr>
<th>Disposition</th>
<th>Over-Triage</th>
<th>Under-Triage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharged from ED</td>
<td>55%</td>
<td>33%</td>
</tr>
<tr>
<td>Admitted Floor</td>
<td>33%</td>
<td>41%</td>
</tr>
<tr>
<td>Admitted ICU</td>
<td>4%</td>
<td>6%</td>
</tr>
<tr>
<td>Transferred</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Died in ED</td>
<td>0%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Results

Hospital Disposition Among Under-Triaged Patients (n=285)

<table>
<thead>
<tr>
<th>Disposition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharged Home</td>
<td>32%</td>
</tr>
<tr>
<td>Discharged to SNF</td>
<td>35%</td>
</tr>
<tr>
<td>Hospice</td>
<td>4%</td>
</tr>
<tr>
<td>Died</td>
<td>2%</td>
</tr>
</tbody>
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