Quality and Process Improvement Initiatives Can Decrease Emergency Department Length of Stay in Severely Injured Children

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Purpose:
We sought to identify and enact solutions to improve transfer times from our emergency department to the pediatric intensive care unit.
Importance:

• ↑ ED LOS in trauma patients = ↑ hospital LOS, ↑ ICU mortality, ↑ in hospital mortality
• The ED ≠ inpatient unit
Current State:

• 320 pediatric traumas per year
• TRN/CRN = nursing care for all pediatric trauma activations
• CRN = seamless transition to adult unit
Survey Results:

• Poor communication
• Long delays

Registry Data:

• Average transfer per year ranged from 59 to 80 minutes
Key Questions:

1. What are we trying to accomplish?  Decreased ED LOS

2. What change can we make that results in improvement? Implement PRRN attendance at full pediatric traumas in the ED

3. How will we know that the change is improvement? Monitor ED LOS, PRRT response to activations, Direct feedback
Implementation:

• PRRNs oriented by a TRN or CRN
• Role defined
• PRRN assessed pt w/ trauma team and
• Provided additional information to PICU MD/charge RN to
• Live February 1, 2019
Metrics:

• ED LOS
• Compliance
• Feedback
• Patients compared before and after implementation
Average ED Length of Stay for FULL pediatric Trauma Activations Prior to Transfer to the PICU

![Graph showing Average ED Length of Stay for FULL pediatric Trauma Activations Prior to Transfer to the PICU](image-url)
## Pre/Post Implementation Patient Demographics

<table>
<thead>
<tr>
<th></th>
<th>Intervention Groups</th>
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<tbody>
<tr>
<td></td>
<td>Pre- N=60</td>
<td>Post- N=10</td>
<td>p</td>
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<tr>
<td>Age, median (IQR)</td>
<td>6.9 (2.6-12.7)</td>
<td>4.5 (0.8-6.6)</td>
<td>0.137</td>
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<tr>
<td>Male (%)</td>
<td>36 (60.0)</td>
<td>6 (60.0)</td>
<td>1</td>
</tr>
<tr>
<td>ISS, median (IQR)</td>
<td>21 (10-29)</td>
<td>23.5 (5-33)</td>
<td>0.909</td>
</tr>
<tr>
<td>ED Length of Stay in minutes, mean [SD]</td>
<td>70.4 (57.9)</td>
<td>49.1 (19.6)</td>
<td>0.033</td>
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</tbody>
</table>
Conclusion:

• PRRN improve communication/handoffs = overall reduction in average ED LOS

• Quicker assessment/disposition optimized appropriate care and improve patient access to critical services in our facility
Thank You

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