ED Throughput

Length of Stay in the Emergency Department

The Challenge and The Solutions

**The Challenge**
- Treating the constantly growing stream of patients coming into the Emergency Department.

**The Solutions**
- Move patients to the safest, most appropriate level of care, whether in the ED or another place in the hospital, quickly and efficiently.
- Treat patients in the ED using best practice evidence-based guidelines in Emergency Medicine.

Goal: Improve ED throughput efficiency by

- Decreasing the time from patient arrival to:
  - Medical Provider Evaluation
  - Discharge
  - Admission
  - Placement in Observation
- Decreasing the time from patient arrival to final disposition
  - Admitted patients
  - Observation patients
Department Overview
- Highest volume, single-site Emergency Department in the Commonwealth of Pennsylvania
- 130,000+ visits annually
- 350 - 400 patients per day
- Level II Trauma Center
- Advanced Primary Stroke Center
- Accredited Chest Pain Center

Patient Profile
- Trauma 5,000
- Heart Attack 200
- Stroke 700
- Pediatric 27,000
- Mental Health 4,000

Census Challenges
Census Challenges

Average Triages Per Hour

Visits
- Nearly 30,000 ambulance patients a year
- 80 – 100 daily

Goals
- Getting the patient to the appropriate level of care as quickly as possible
- Addressing the physical and emotional needs of the patient and their families
- Developing efficiencies to expedite care and decrease patient throughput
- Maintain high levels of patient satisfaction
LOS in the ED

- Total ED LOS: 3.0 hours
- Discharged patients: 2.5 hours
- Admitted patients: 5.6 hours
- Observation Patients: 3.6 hours

Door to Provider Metric

- Front End Processes:
  - Front End Triage Team
  - Protocol Physician in Triage 10 am – 10 pm
  - Triage Nursing Protocols
  - Immediate Bedding
  - Security Officer Presence

Door to Provider

- Patient Focused Treatment Areas:
  - Pediatric Service Area (PSA)
  - Fast Track
  - Opening of PODS/Flexing of Staff
  - Intermediate Pod F Care Model
Decrease Evaluation Time

- Enhanced Protocols
- Streamlined Testing
  - Point-of-care testing
  - Non-oral contrast Abdominal CT protocol (began August, 2011)
- Concurrent ED Case management
  - Evaluation of patients’ meeting admission criteria
  - Housed with the Emergency Physicians

Observation Patient Metrics

- Streamlined Disposition
  - OB/LDRP Triage Process
  - Psychiatric Transition Unit (PTU)
  - R4 Observation Unit

Discharged Patient Metrics

- Internal Improvements
  - Transporter Presence in the ED
  - Laboratory/ED Interventions
  - Tier III
Admitted Patient Metrics

- Throughput Initiatives
  - Hospital-Wide Patient Throughput Meetings
  - Transport of Critical Care Patients
  - Hospitalist Admission Process
  - Patients Evaluated in an Evaluation and Assessment Area
  - Bridge Orders for Inpatients

ED Metrics for Patients Admitted to the Hospital

Results

ED Operational Dashboard
ED Operational Dashboard

<table>
<thead>
<tr>
<th>Month</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census</td>
<td>5,616</td>
<td>9,607</td>
<td>11,085</td>
<td>3,112</td>
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<td></td>
</tr>
<tr>
<td>Average Daily Census</td>
<td>341</td>
<td>343</td>
<td>358</td>
<td>346</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Daily Admissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press Ganey (&lt;75%)</td>
<td>49%</td>
<td>54%</td>
<td>61%</td>
<td>56%</td>
<td></td>
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</tr>
<tr>
<td>LWOT (&lt;3%)</td>
<td>1.80%</td>
<td>1.78%</td>
<td>1.73%</td>
<td>1.61%</td>
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<tr>
<td>LOS Acute (hours)</td>
<td>4.5</td>
<td>5.82</td>
<td>4.5</td>
<td>5.6</td>
<td>4.5</td>
<td>5.58</td>
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<tr>
<td>LOS Intermediate (hours)</td>
<td>3</td>
<td>3.4</td>
<td>3</td>
<td>3.5</td>
<td>3</td>
<td>3.2</td>
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<tr>
<td>FT ALOS</td>
<td>1.5</td>
<td>2.08</td>
<td>1.5</td>
<td>2.08</td>
<td>1.5</td>
<td>2.05</td>
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<tr>
<td>FT Average Patients Per Day</td>
<td>47</td>
<td>42</td>
<td>44</td>
<td>43</td>
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<td></td>
</tr>
<tr>
<td>PSA ALOS</td>
<td>2</td>
<td>2.47</td>
<td>2</td>
<td>2.5</td>
<td>2</td>
<td>2.4</td>
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<tr>
<td>PSA Average Patients Per Day</td>
<td>29</td>
<td>29</td>
<td>31</td>
<td>30</td>
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<td></td>
</tr>
<tr>
<td>R4 Average Daily Census</td>
<td>20</td>
<td>21</td>
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<td>23</td>
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<td></td>
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<tr>
<td>Room to Doctor</td>
<td>24</td>
<td>26</td>
<td>27</td>
<td>25</td>
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<tr>
<td>Total Department LOS (excluding OBS)</td>
<td>3.93</td>
<td>3.9</td>
<td>3.88</td>
<td>3.68</td>
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Results

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Median Aug - Oct</th>
<th>Median Feb - Apr</th>
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<tbody>
<tr>
<td>Q1 10</td>
<td>2%</td>
<td>20%</td>
</tr>
<tr>
<td>Q2 11</td>
<td>4%</td>
<td>68%</td>
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<tr>
<td>Q3 10</td>
<td>1%</td>
<td>15%</td>
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Emergency Department Volume and Press Ganey Percentile Ranking

<table>
<thead>
<tr>
<th>Year</th>
<th>Press Ganey &lt;70,000 visits/year</th>
<th>Ranking</th>
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<tbody>
<tr>
<td>2007</td>
<td>2,000</td>
<td>3.1</td>
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<tr>
<td>2008</td>
<td>3,000</td>
<td>3.1</td>
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<tr>
<td>2009</td>
<td>4,000</td>
<td>3.1</td>
</tr>
<tr>
<td>2010</td>
<td>5,000</td>
<td>3.1</td>
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Results
Successes
- PG Awards
  - 99% Ranking for Emergency Departments with 100,000 or more visits consistently for two years
  - Finalist in Press Ganey Success Stories award 2012
- Highmark Blue
  - Quality Blue Award 2011 Emergency Department Throughput

Recognition

Successes
- Core Measure Compliance
  - Consistently greater than 99% compliant with core measures related to Pneumonia and Acute MI
Lessons Learned

- Ongoing, real-time monitoring to hardwire new processes and practices
- Staff champions to establish the practice and engage peers in implementing change
- Continuous research into best practice in emergency care
- Proactive versus reactive approach to volume fluctuations
- Capturing patient boarding hours to assess admission processes
- Challenging computer technology limitations
- Improve communication
  - Shift huddles, nurse and medical provider staff meetings, and departmental newsletter combine to communicate changes, expectations, and goals
  - Weekly communication of ED dashboard on the ED homepage to keep staff aware of our goals, successes, and challenges

Questions