Measuring the ROI in Patient Safety Reporting

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What is a Medical Error?

• Adverse or Sentinel Event
• Near Miss or Close Call
IT SAYS HERE THAT THE RATE OF MEDICAL ERRORS IS STUNNINGLY HIGH.

THAT EXPLAINS MY Hysterectomy.
What Do We Know about Medical Errors?

- A leading cause of death
- More common than we thought
- Preventable
- More surgical than medication-based
- A system problem
- Costly
- A greater awareness by the public
The Patient Safety Crisis

- 44,000 to 98,000 deaths per year
- $37.6B in costs per year*
- Preventable mistakes cost $17 to $29 billion per year*
- Medical errors consume 10-15% of a hospital’s annual operating budget

Medical Errors are a Leading Cause of Death

70% of Medical Errors are Preventable

*IOM Report 1999
The Patient Safety Crisis

Event Cost of Common Preventable Errors

- **Preventable Medication Errors**
  - Occur in 2% of admissions*
  - Increase hospital cost by $4,700 per admission
  - Cost providers $2 billion annually

- **Preventable Hospital Acquired Infections**
  - 7.5 per 1000 admissions
  - 15.4% or 1,793 of these patients die
  - Additional 205,000 days of care
  - $2 billion in additional charges to payers

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*Brigham and Woman’s Hospital

** The Pennsylvania Health Care Cost Containment Council, 2005

***1.6 Million Admission Analysis, MedMined, Inc. September 2006
Major Opportunity

Greater than 50% of the $17 - $29 billion national cost associated with medical errors is preventable.

When is Good Performance Good Enough?

- If we were 99.99% accurate, we would still experience:
  - 2 unsafe plane landings per day at O’Hare Airport
  - 500 incorrect surgical operations each week
  - 50 newborns dropped at birth by doctors daily
  - 32,000 missed heartbeats per person, per year
  - 200,000 documents lost by the IRS this year
1 Significant
29 Minor/Major

300 Near Miss/No Harm*

*Heinrich Ratio
Harm Ratio Evolution in Study Site

- 1:28:30 – Prior to implementation
- 1:26:100 – Year 2
- 1:29:150 – Year 3
- 1:30:500 – Year 5
- 1:30:1500 – Year 8
Measurement Approach

• “The more information you flush out, the more you learn about the vulnerabilities in your system”

• Martin J. Hatlie, JD, founding Executive Director, National Patient Safety Foundation
ROI Initial Study Methods

- **Total cost of care for (DRG, severity adjusted) patients with error/event less total costs care for all patients in same DRGs.**

- **May under estimate reductions since reference group includes all patients --- those with and without a medical error/event.**

- **Algorithm built within a reporting software system**
### Improvement Area

<table>
<thead>
<tr>
<th>Improvement Area</th>
<th>Number of Reported Events</th>
<th>Average Additional LOS</th>
<th>Additional Cost/Event</th>
<th>Annual Additional Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication Errors</td>
<td>865/ year</td>
<td>1.8 days</td>
<td>$1,022</td>
<td>$510,824</td>
</tr>
<tr>
<td>Patient Falls</td>
<td>610 / year</td>
<td>2.2 days</td>
<td>$889</td>
<td>$484,816</td>
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<tr>
<td>Pressure Ulcers (Stages I - IV)</td>
<td>399 / year</td>
<td>4.63 days</td>
<td>$2,644</td>
<td>$628,962</td>
</tr>
<tr>
<td>Hospital-Acquired Infections</td>
<td>381/ year</td>
<td>4.06 days</td>
<td>$2,723</td>
<td>$936,671</td>
</tr>
</tbody>
</table>

| **Total Identified Cost Savings Opportunity** | **$2,561,273** |

*450 Bed Community Hospital*
### ROI Initial Study Results

<table>
<thead>
<tr>
<th>Study Results for Year 3</th>
<th>All Payer Cost Avoidance</th>
<th>Medicare Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>Additional Days</td>
<td>Additional Days</td>
</tr>
<tr>
<td>Medication Events</td>
<td>$155,435</td>
<td>$53,667</td>
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<tr>
<td></td>
<td>373</td>
<td>75</td>
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<tr>
<td>Total Falls</td>
<td>$196,006</td>
<td>$108,518</td>
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<td></td>
<td>470</td>
<td>213</td>
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<tr>
<td>Total Skin Events</td>
<td>$268,652</td>
<td>$131,350</td>
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<td></td>
<td>367</td>
<td>42</td>
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<tr>
<td>Nosocomial Infections</td>
<td>$591,968</td>
<td>$252,404</td>
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<tr>
<td></td>
<td>905</td>
<td>339</td>
</tr>
<tr>
<td><strong>TOTAL inpatient cost avoidance from 4 areas</strong></td>
<td><strong>$1,212,061</strong></td>
<td><strong>$545,940</strong></td>
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<tr>
<td></td>
<td><strong>2,115</strong></td>
<td><strong>669</strong></td>
</tr>
</tbody>
</table>
Additional Cost of Care Declined 2.2% per Month
Trend in Medical Malpractice Claims

Total Claims by year
Patient Falls
Rate per 1,000 Adjusted Patient Days

Fall Rate per 1000 Pt Days

24 Month Date Range
Medication Events
Rate per 1,000 Adjusted Patient Days
Follow Up Study

• Focus review of reimbursement for inpatient cases having a Medication Event in 2006 for Respiratory Diagnoses only

• 42 of 1710 inpatient respiratory diagnoses patients (2.4%) had reported Med Events during that period

• 26 of 42 (61%) were possibly preventable

• ROI Findings:
  – All Med Events that were reported as moderate to severe showed more total cost than estimated reimbursement
• “The number one cause of medical mistakes is not incompetence but confusion”

• Michael Milleson-author- Demanding Medical Excellence: Doctors and Accountability in the Information Age