Improving Safety: Developing Safety Metrics and Improving Error Reporting

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Learning Objectives

• List Prevalent patient safety issues reported within hospitals
• Identify Methods to effectively Target, Review and reduce errors
• Using an error-reduction event model, evaluate how to improve the workflow process within the hospital
• Describe how key Safety Metrics can be developed and used to improve processes
Background

• In late 1999, the Institute of Medicine (IOM) published the sentinel report, *To Err is Human: Building a Safer Health System*, that captured the US Nation's attention.

• The report highlighted the scope of medical errors and raised safety concerns.
# What’s the Harm in healthcare?

<table>
<thead>
<tr>
<th>Safety Issues</th>
<th>Number of cases/yr including deaths</th>
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<tbody>
<tr>
<td>Hospital-acquired infections (MRSA, VRE, C. Diff, VAP/pneumonia, UTI)</td>
<td>2.2 Million</td>
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<td>Pressure Ulcers</td>
<td>257,000</td>
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<tr>
<td>Medication Errors</td>
<td>1.5 million</td>
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<tr>
<td>Falls and Fractures</td>
<td>100,000</td>
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<tr>
<td>Deep Vein Thrombosis</td>
<td>46,764</td>
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<tr>
<td>Surgical errors (wrong-site/wrong side, objects left behind)</td>
<td>2,892</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>4 Million</strong></td>
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1-in-3 hospital patients is accidentally harmed every year in U.S. hospitals.  
100,000 deaths/yr ~ 10 jumbo jet crashes each wk
Adverse Event Capture

Audience Poll:

• What percentage of error-related event are reported at your institution?
  a. 90%
  b. 70%
  c. 50%
  d. 30%
  e. Not sure
Improve Data Capture

• Psychological safety vs Accountability: what’s the right point on a balance beam?

• Psychological safety: is a belief that one will not be punished or humiliated for speaking up with ideas, questions, concerns, or mistakes

• Staff education, non-punitive culture
Psychological Safety

Comfort Zone

Apathy Zone

Anxiety Zone

Learning Zone

Motivation & Accountability

Psychological Safety
Improve Data Capture

• Review Reporting Process including the reporting forum
• Proactive screening program:
  - Chart review: medications, labs, radiology
  - Adopt trigger tools: IHI Global tool for measuring Adverse Events
IHI Global trigger tool

• Captures adverse events related to active delivery of care

• **Triggers:**
  - **Care related:** blood transfusion, code arrest; acute dialysis, positive blood culture, doppler for DVT, drop Hb or Hct by 25%, pt fall, PU, HAI, in-hospital stroke, restraints
  - **Medication related:** PTT>100; INR>6; Glucose<50; Vit K admin; narcan admin; flumazenil admin
IHI Global trigger tool

- **Surgical related:** reoperation; post-op ICU transfer; PACU intubation; change in OR plan; intra/post-OP death
- **Intensive Care:** pneumonia; readmission to ICU; re-intubation
- **Perinatal related:** 3\textsuperscript{rd}/4\textsuperscript{th} degree laceration; platelet < 50,000; blood loss > 500ml for vaginal delivery
- **ED related:** readmission within 48hrs; time in ED > 6hrs
  - 90 AE/ 1000 patient days or 40 AE/ 100 admissions
Improve Data Capture

• Define metrics and adopt a Safety Plan

• Encourage reporting: annual education:

  Hospital care is complex and depends on the interaction of so many disciplines

• Provide feedback
• Suggestion Box
Data Collection and Review

- System:
  - Build Standard data entry fields
  - Avoid free text
- Define who will review the Data:
  - Patient Safety Committee
  - P&T
  - PIC
  - Nursing Quality council

** Share the data **
Reduce Events

• Look at trends:
  based on risk = consequence X likelihood
• Adopt a standard system for risk level and action requirements
• Leadership and management safety rounds: feedback; observations
• Adopt recommendations from Safety societies: ISMP, AHRQ
Error- Reduction Models

• FMEA: Failure mode effect analysis
• PDSA: Plan- Do- Study- Act
PDSA: Plan- Do- Study- Act

ACT
Plan the next cycle
Decide whether the change can be implemented

PLAN
Define the objective, questions and predictions. Plan to answer the questions (who? what? where? when?)
Plan data collection to answer the questions

STUDY
Complete the analysis of the data
Compare data to predictions
Summarise what was learned

DO
Carry out the plan
Collect the data
Begin analysis of the data
Measurements

“Not everything that can be counted counts. Not everything that counts can be counted”
# Joint Commission International
## Patient Safety Goals

| 1. Identify patients correctly | Patient identification before blood transfusion  
Patient identification before medication administration |
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<td>2. Improve effective communication</td>
<td>Reporting of critical test results (read-back)</td>
</tr>
<tr>
<td>3. Improve the safety of high-alert medications</td>
<td>Pharmacy interventions in KCl orders</td>
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</table>
| 4. Ensure correct-site, correct-procedure, correct-patient surgery | Time out and skin marking  
Laterality documentation in the patient medical record |
| 5. Reduce the risk of healthcare associated infections | Compliance with hand hygiene guidelines  
Surgical site infections in clean surgery |
| 6. Reduce the risk of patient harm resulting from falls | Patient falls by unit  
Injury falls |
Patient Identification

**Goal 1:**

Improve the accuracy of patient identification.

Use at least two patient identifiers when providing care, treatment and services.
Goal 2:

Improve the effectiveness of communication among caregivers.

Report critical results of tests and diagnostic procedures on a timely basis.
Medication Safety

Goal 3:

Improve the safety of high-alert medication
Universal Protocol for Preventing Wrong Site, Wrong Procedure, Wrong Person Surgery

**Goal 4:**

- Conduct a pre-procedure verification process.

Mark the procedure site

A time-out is performed before the procedure.
Health Care-Associated Infections

Goal 5:

Reduce the risk of health care-associated infections.

Comply with either the current Centers for Disease Control and Prevention (CDC) hand hygiene guidelines or the current World Health Organization (WHO) hand hygiene guidelines.
Reduce Falls

Goal 6:

Reduce the risk of patient harm resulting from falls.