Challenges for Hospitals: Creating and Maintaining High Reliability

PRESENTER

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To measurably improve the lives of the most vulnerable members of society and those who care for them.
Learning Objectives

• The evolution of the patient/safety movement
• Gain insight into key drivers associated with variation in care amongst clinical teams
• Refresh initiatives in building a culture of high reliability within your organization to improve patient care
• Learn how to successfully implement change initiatives for mitigating clinical risk
• Understand the challenging landscape and where we are today
Evolution of the Patient Safety Movement
The IOM Report “To err is Human”

• The Institute of Medicine (IOM) released a report in 1999 entitled “To Err is Human: Building a Safer Health System”.

• The report stated that errors cause between 44,000 and 98,000 deaths every year in American hospitals, and over one million injuries.

• The report called for a 50% reduction in medical errors over 5 years. Its goal was to break the cycle of inaction regarding medical errors by advocating a comprehensive approach to improving patient safety.
Hot Spots for Patient Safety
What Gets Publicized is Not the Major Issue

Wrong site surgery (1 per 113,000 surgeries)

Retained foreign body (1 per 9000-19,000 cases)

Suit: Brain surgery allegedly botched
Published: Feb. 9, 2010 at 10:16 AM

DEARBORN, Mich., Feb. 9 (UPI) -- A Flat Rock, Mich., woman suffered brain damage after surgery was begun on the wrong side of her head to fix an aneurysm, her family alleges in a lawsuit.

Lawyers Weekly
Surgical sponge is left in teenager’s abdomen

$35,000 settlement
Published: April 20, 2009

$355,000 settlement

The plaintiff was 18 when she underwent a laparotomy at the defendant hospital.

Two nurses and one scrub technician allegedly conducted three separate counts of surgical instruments and sponges during the procedure.

For nearly a year following the procedure, the plaintiff had a low-grade fever and suffered flu-like symptoms. Ultimately, she developed a lump in her groin and underwent a CT scan of her abdomen, which revealed the presence of a foreign object.
The Majority of Technical Errors Do Not Occur Where Expected

- Technical errors usually involve experienced surgeons performing common/routine procedures

FIGURE 2. Surgeon experience level in 140 technical errors among index operations (advanced procedures requiring special training) versus routine operations. Index operations are high-complexity, subspecialty procedures for which additional training and specialization beyond a standard residency and/or fellowship is usually required. All other operations are considered routine. Surgeons’ experience level was ascertained from their number of years in practice, specialty training, and volume of experience with the specific procedure.
System Factors Can Increase the Likelihood of Error

• Systems factors—Involve interrelationships between individuals, their tools, and the environment they work in

• Systems factors contributed to 86% of errors

Table II. Incidents, by contributing factor

<table>
<thead>
<tr>
<th>Factors cited as contributing to error in an incident</th>
<th># of incidents</th>
<th>% of incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inexperience/lack of competence</td>
<td>75</td>
<td>53%</td>
</tr>
<tr>
<td>Communication breakdown</td>
<td>62</td>
<td>43%</td>
</tr>
<tr>
<td>Excessive workload/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inadequate staffing</td>
<td>30</td>
<td>22%</td>
</tr>
<tr>
<td>Lack of supervision</td>
<td>29</td>
<td>21%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>21</td>
<td>16%</td>
</tr>
<tr>
<td>Interruptions/distractions</td>
<td>21</td>
<td>16%</td>
</tr>
<tr>
<td>Technology/equipment failure</td>
<td>22</td>
<td>15%</td>
</tr>
<tr>
<td>Administrative complexity/bureaucracy</td>
<td>9</td>
<td>6%</td>
</tr>
<tr>
<td>Inappropriate protocol</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Ergonomics (lighting, space, etc.)</td>
<td>2</td>
<td>1%</td>
</tr>
</tbody>
</table>

The Need for Coaching in Healthcare?

THE NEW YORKER
Oct 3, 2011

*Personal Best: Top athletes and singers have coaches. Should you?*

by Atul Gawande

“No matter how well trained people are, few can sustain their best performance on their own. That’s where coaching comes in.”

- Barry Blitt
The Impact of OB Team Training

<table>
<thead>
<tr>
<th>BEFORE TRAINING</th>
<th>AFTER TRAINING</th>
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<tbody>
<tr>
<td>59 events</td>
<td>50 events</td>
</tr>
<tr>
<td>78% high-severity</td>
<td>62% high-severity</td>
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</table>
The Impact of OB Team Training...

Comparative results from CRICO/RMF
(Impact on Adverse Outcome Index)

-12% >37wks
-15% Total
-53% <37wks

Mann et al. Cont OB/GYN, 2006
2 Decades after the IOM Report...

- The IOM report stated that 44,000 to 98,000 people died each year due to medical error. This, we now know, severely underestimated the true numbers.

- Today we know that the number is which is more likely 200,000 to 400,000 deaths in the USA, and many millions globally.

- When we add in patient harm resulting from error, this number rises astronomically.

- Maternal Mortality crisis
Maternal Mortality Crisis

A Rising Crisis

- More American women are dying of pregnancy-related complications than any other developed country
- and is the only country where the rate is rising.

Global, Regional, and National Levels of Maternal Mortality, 1990-2015

Source: The Lancet
Credit: Rob Weichert/Propublica
*Only data for 1990, 2000 and 2015 was made available in the journal.
Identifying and Reducing Variation in Care
The 5 Principles of a High-Reliability Organization

1. **Preoccupation with Failure**
   ![Wrench and Screwdriver]

2. **Reluctance to Simplify**
   ![Magnifying Glass]

3. **Sensitivity to Operations**
   ![Gear and Gear]

4. **Commitment to Resilience**
   ![Lifting Weights]

5. **Deference to Expertise**
   ![Lightbulb and Gear]
# The Journey to High Reliability

<table>
<thead>
<tr>
<th>01</th>
<th>Reduce Variation</th>
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<tbody>
<tr>
<td>Standardize clinical knowledge and readiness-to-practice</td>
<td></td>
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<tr>
<td>Assess and personalize learning</td>
<td></td>
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<tr>
<td>Deliver consistent, evidence-based content</td>
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</table>

<table>
<thead>
<tr>
<th>02</th>
<th>Personalize Learning</th>
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<tr>
<td>Acknowledges what you already know</td>
<td></td>
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<tr>
<td>Respect for your time</td>
<td></td>
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<tr>
<td>Uses clinical vignettes and case-based scenarios</td>
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<tr>
<td>Learners drive their own experience</td>
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<th>03</th>
<th>Empower High Reliability</th>
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<tr>
<td>Creates a common vision</td>
<td></td>
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<tr>
<td>Promotes interprofessional teamwork and improvements</td>
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<tr>
<td>Supports a culture of continuous improvement</td>
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</table>
Identification of Variation

These clinicians are demonstrating proficiency

These clinicians need additional support
Example Scatter Plot with De-identified Data
Fetal Heart Monitoring: Nurse Baseline Data

Demographic Data
Fetal Assessment and Monitoring, Nurses
N = 3424 Nurses
Knowledge 50th percentile score: 74.5%
Judgment 50th percentile score: 66.6%
Data as of 01/01/2020
Percentiles based on n = 33445 Nurses
Example Scatter Plot with De-identified Data
Fetal Heart Monitoring: Nurse Second Assessment Following Education (Personalized Learning)

Nurse system average increases significantly and less variation

Demographic Data
Fetal Assessment and Monitoring, Nurses
N = 3440 Nurses
Knowledge 50th percentile score: 74.5%
Judgment 50th percentile score: 66.6%
Data as of 01/01/2020
Percentiles based on n = 33445 Nurses

Overall Score Percentiles
- 0-25th users
- 26th-50th users
- 51st-75th users
- 76th-99th users

Most Recent Assessment Round
Accreditation Measure in Obstetric Hemorrhage: Scatterplot by User: Obstetric & Post-Partum Hemorrhage Baseline Assessment Results

These nurses received traditional classroom style education prior to taking Relias OB Hemorrhage Assessment – note the significant variation among the nurse team.
Relias OB Tracks Baseline, Improvement and Identifies Variation

Initial = 2312 Nurses vs Current 2019 = 1846 Nurses
National Peer Group N = 24046 Nurses
Principles of Adult Learning

• 6 Principles of Adult Learning
  o Internally motivated & self-directed
  o Bring life experiences & knowledge
  o Goal-oriented
  o Relevancy-oriented
  o Practical
  o Like to be respected

• Different Learning Styles
  o Visual
  o Auditory
  o Tactile/Kinesthetic
  o Experiential

• Knowledge is Complex & Comes in Different Forms
  o Concepts
  o Skills
  o Judgment

“Knowledge is not like a hard drive—it is a process of building circuitry in the brain.”
- Mike Connell, Learning Expert
Creating a Common Vision/Shared Mental Model
Putting it All Together: Two Case Studies

Publication on OB Improvement

Journal of Patient Safety and Risk Management
October 2019 edition

Authors: Nancy Cossler, MD, Peter Pronovost, MD, PhD, et al.

Titled: “Malpractice Litigation, Quality Improvement, and the University Hospitals Obstetric Quality Network”

Reduction in OB serious safety events for moms and babies: 91% reduction (per 10,000 patient days 2010-2016)

72% reduction in OB litigation costs ($54M cost savings)

Results:
- Reduced variation in care led to improvement in knowledge and judgment in all four major risk areas.
- Shoulder dystocia claims: 88% reduction
- Maternal death or claims related to cord prolapse: 0
- OB patients requiring transfusion of > 4 units RBC: 68% reduction
- Peri-partum hysterectomies: 77% reduction

Client Profile:
- Health system of 18 hospitals, including seven hospitals providing obstetric services with 63% of OB patients injured through Malick study period included 78K+ deliveries by 83 providers.
OB Claim Frequency Dropped by 50% since Inception of OB Quest

OB Claim Frequency and OB Quest Participation
(Reduced from 6.4 Per 10K Deliveries to 3.3 or 50%)

- Tier One Quest Participation
- Claim Frequency (Claim Count Per 10,000 Deliveries)

OB Quest Participants


Contract Year
THANK YOU