SAFETY CULTURE EVOLVES – IS YOURS PROACTIVE OR REACTIVE?

Michael Leonard, MD
Health Care Improvement Foundation
March 19, 2014
Improving Safety Requires a Learning System

- Safety is a characteristic of a **SocioTechnical system**
- System-level failures occur almost always because of unforeseen combinations of component failures

**FIGURE 3-1**
Sociotechnical system underlying health IT-related adverse events.

SOURCE: Adapted from Harrington et al. (2010), Sittig and Singh (2010), and Walker et al. (2008).
Safety Cultures Evolve

UNMINDFUL
“We show up, don’t we?”
Chromically Complacent

REACTIVE
“We safety is important. We do a lot every time we have an accident”

SYSTEMATIC
Systems being put into place to manage most hazards

PROACTIVE
“We methodically anticipate”—prevent problems before they occur

GENERATIVE
Organizational Culture “Genetically-wired” to produce safety

Where is Yours?

Attribution: Prof. Patrick Hudson, Univ. Leiden
SocioTechnical Framework

Unmindful • Reactive • Systematic • Proactive • Generative

• Patient & Family Centered Care
• Leadership – Senior and Clinical
• Effective Teamwork
• Psychological Safety
• Organizational Fairness
• Reliable Processes of Care
• Learning System - Improvement

Safe & Reliable Healthcare
Patient & Family Centered Care

- **GENERATIVE**
  Organization wired for safety and improvement

- **PROACTIVE**
  Playing offense - thinking ahead, anticipating, solving problems

- **SYSTEMATIC**
  Systems in place to manage hazards

- **REACTIVE**
  Playing defense – reacting to events

- **UNMINDFUL**
  No awareness of safety culture

- Truly patient-centered care, a true partnership, all about them
- Structured process for patients and family at the table, visible results
- Care process visible, learning and feedback sporadic
- Customer service is the primary focus
- Care process built around the convenience of providers

Safe & Reliable Healthcare
A Culture of Safety

No one is ever hesitant to voice a concern about a patient

Action is taken, feedback reliably provided, changes are visible for staff and patients

Skilled caregivers playing by the rules feel safe to discuss and learn from errors

Concerns raised by frontline caregivers are taken seriously & acted upon
Senior Leadership

- **Cyclic flow of information with feedback and organizational learning**
- **Systematic engagement with dialogue, support and learning**
- **Process for interaction between senior leaders and front line staff**
- **They’re here – something bad must have happened**
- **We don’t know or see them**

---

**GENERATIVE**
Organization wired for safety and improvement

**PROACTIVE**
Playing offense - thinking ahead, anticipating, solving problems

**SYSTEMATIC**
Systems in place to manage hazards

**REACTIVE**
Playing defense – reacting to events

**UNMINDFUL**
No awareness of safety culture

Safe & Reliable Healthcare
The Ideal Unit

Safe & Reliable Healthcare
Clinical Leadership

**GENERATIVE**
Organization wired for safety and improvement

**PROACTIVE**
Playing offense - thinking ahead, anticipating, solving problems

**SYSTEMATIC**
Systems in place to manage hazards

**REACTIVE**
Playing defense – reacting to events

**UNMINDFUL**
No awareness of safety culture

- Leaders create high degrees of psych safety and accountability.
- Leaders model the desired behaviors to drive culture of safety.
- Training and support exists for building clinical leadership.
- Episodic, completely dependent on the individual clinician.
- Absent for the most part.
Leaders

The associated behaviors:

**GENERATE TRUST**
- Open; Honest; Approachable

**PROMOTE RESPECT**
- Non-negotiable; Non-hierarchical

**PSYCHOLOGICAL SAFETY**
- Responsive to team members speaking up about concerns and ideas

**JUST CULTURE**
- Clear policy and practice of fair treatment and accountability

Safe & Reliable Healthcare
Effective Leadership

• Set a positive active tone
• Think out loud to share the plan – common mental model
• Continuously invite people into the conversation for their expertise and concern
• Use their names
Critical Behaviors

Surgical team behaviors and patient outcomes

Karen Mazzocco, R.N., J.D. a,*, Diana B. Petitti, M.D., M.P.H. b,
Kenneth T. Fong, M.S. c, Doug Bonacum, M.B.A. c, John Brookey, M.D. d,
Suzanne Graham, R.N., Ph.D. e, Robert E. Lasky, Ph.D. f, J. Bryan Sexton, Ph.D. g,
Eric J. Thomas, M.D., M.P.H. f

a Sharp Metropolitan Medical Campus, Sharp Healthcare, Patient Relations and Concierge Services, San Diego, CA USA;
b Arizona State University, Tempe, AZ, USA; c Kaiser Permanente Program Offices, Oakland, CA, USA; d Kaiser Permanente Southern California, Pasadena, CA, USA; e Kaiser Permanente Northern California, Oakland, CA, USA;
f University of Texas Medical School, Houston, TX, USA; g Johns Hopkins School of Medicine, Baltimore, MD, USA

KEYWORDS:
Operating room;
Team behavior;
Patient outcomes;
Human factors;
Behavioral markers

Abstract

BACKGROUND: Little evidence exists that links teamwork to patient outcomes. We conducted this study to determine if patients of teams with good teamwork had better outcomes than those with poor teamwork.

METHODS: Observers used a standardized instrument to assess team behaviors. Retrospective chart review was performed to measure 30-day outcomes. Multiple logistic regressions were calculated to assess the independence of the association between teamwork with patient outcome after adjusting for American Society of Anesthesiologists (ASA) score.

RESULTS: In univariate analyses, patients had increased odds of complications or death when the following behaviors were exhibited less frequently: information sharing during intraoperative phases, briefing during handoff phases, and information sharing during handoff phases. Composite measures of teamwork across all operative phases were significantly associated with complications or death after adjusting for ASA score (odds ratio 4.82; 95% confidence interval, 1.30–17.87).

CONCLUSION: When teams exhibited infrequent team behaviors, patients were more likely to experience death or major complication.

© 2008 Published by Elsevier Inc.
Effective Teamwork

- **Generative**: Organization wired for safety and improvement
  - Teamwork and continuous learning deeply embedded and central to our culture

- **Proactive**: Playing offense - thinking ahead, anticipating, solving problems
  - Teamwork methodically taught and modeled across the organization

- **Systematic**: Systems in place to manage hazards
  - Training and tools available, partial implementation

- **Reactive**: Playing defense – reacting to events
  - Focus on teamwork awareness / training in response to adverse events

- **Unmindful**: No awareness of safety culture
  - If people would just do their jobs we’d have no problems

Safe & Reliable Healthcare
# Teams

**WHAT TEAMS DO:**

- Plan Forward
- Reflect Back
- Communicate Clearly
- Manage Conflict

<table>
<thead>
<tr>
<th>The associated behaviors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief (huddle, pause, timeout, check-in)</td>
</tr>
<tr>
<td>Debrief</td>
</tr>
<tr>
<td>Structured Communication SBAR and Repeat-Back</td>
</tr>
<tr>
<td>Critical Language</td>
</tr>
</tbody>
</table>
Debriefing – Linking teamwork and Improvement

- What did we do well?
- What did we learn so we can do it better the next time?
- What got in the way that needs to be fixed?
Effect of a Comprehensive Surgical Safety System on Patient Outcomes

Eefje N. de Vries, M.D., Ph.D., Hubert A. Prins, M.D., Ph.D.,
Rogier M.P.H. Crolla, M.D., Adriaan J. den Outer, M.D.,*
George van Andel, M.D., Ph.D., Sven H. van Helden, M.D., Ph.D.,
Wolfgang S. Schlack, M.D., Ph.D., M. Agnès van Putten, B.Sc.,
Dirk J. Gouma, M.D., Ph.D., Marcel G.W. Dijkgraaf, Ph.D.,
Susanne M. Smorenburg, M.D., Ph.D., and Marja A. Boermeester, M.D., Ph.D.,
for the SURPASS Collaborative Group†

ABSTRACT

BACKGROUND
Adverse events in patients who have undergone surgery constitute a large proportion of iatrogenic illnesses. Most surgical safety interventions have focused on the operating room. Since more than half of all surgical errors occur outside the operating room, it is likely that a more substantial improvement can be achieved by targeting the entire surgical pathway.
Implementing a surgical checklist: More than checking a box

Shauna M. Levy, MD, Casey E. Senter, BS, Russell B. Hawkins, BA/BBA, Jane Y. Zhao, BA, Kaitlin Doody, Lillian S. Kao, MD, MS, Kevin P. Lally, MD, MS, and KuoJen Tsao, MD, Houston, TX

Background. Perioperative checklists are mandated by many hospitals as determined by the reduction in morbidity and mortality seen with the use of the World Health Organization's Surgical Safety Checklist. An adapted perioperative checklist was implemented within our hospital system, and compliance with the checklist was reported to be 100%. We hypothesized that compliance does not measure the fidelity of implementation.

Methods. During a 7-week period, a prospective study was performed to evaluate the completion of all preincision components of the surgical checklist. Pediatric surgical operations were selected for direct observation. In addition, a poststudy survey was used to assess perception and understanding of the checklist process.

Results. A total of 142 pediatric surgical cases were observed. Hospital reported data demonstrated 100% compliance with the preincision phase of the checklist for these cases. None of the cases completely executed all items on the checklist, and the average number of checklist items performed in the observed cases was 4 of 13. The most commonly performed checkpoint were the confirmation of patient name and procedure (99%) and the “timeout” at the start of the checklist (97%). The rest of the checkpoints were performed in less than 60% of cases. Adherence did not increase during the observation period.

Conclusion. These data show that despite the 100% documented completion of the preincision phase of the checklist; most of the individual checkpoints are either not executed as designed or not executed at all. These findings demonstrate lack of checklist implementation fidelity, which may be a reflection of a poor implementation and dissemination strategy. (Surgery 2012;152:331-6.)

From the Center for Surgical Trials and Evidence-based Practice, Departments of Pediatric Surgery and Surgery at the University of Texas Medical School at Houston, and The Children’s Memorial Hermann Hospital, Houston, TX
Using Cultural Data and Teamwork to Drive Improvement

- Our organization has a bright future
- Leadership communicates the vision in a way that motivates me
- We have open and honest two-way communication
- We maintain focus on the Mission and Core values while embracing change
- I would recommend our organization to others who need care
- I feel appreciated for my work
- My input is valued
- Leadership responds appropriately to feedback from front line caregivers
- I am encouraged to learn and grow professionally
- I am supported in dealing with difficult situations at work

2009 Percent Favorable  |  2010 Percent Favorable  |  2010 Hospital Partner

Safe & Reliable Healthcare
CULTURE IS RELATED TO...

Teamwork Climate Scores Across Facility

- CCU: 28
- REHAB: 33
- OR: 36
- EMERG: 41
- 5 WEST: 45
- 6 WEST: 45
- PEDS: 49
- GERI: 49
- DIALYSIS: 51
- PERIOP: 52
- PHARM: 55
- 3 WEST: 62
- ICU: 62
- NICU: 73
- SICU: 75
- PEDS: 80
- OB: 98

HCAHPS: 50
Medication Errors per Month: 6.1
Days between C Diff Infections: 40
Days between Stage 3 Pressure Ulcers: 18

Illustrative Data: Extracted from Blinded Client Data
Major article

Nurse staffing, burnout, and health care–associated infection

Jeannie P. Cimiotti DNSc, RN\textsuperscript{a,b,*}, Linda H. Aiken PhD\textsuperscript{c}, Douglas M. Sloane PhD\textsuperscript{c}, Evan S. Wu BS\textsuperscript{c}

\textsuperscript{a}New Jersey Collaborating Center for Nursing, Rutgers, The State University of New Jersey, Newark, NJ
\textsuperscript{b}College of Nursing, Rutgers, The State University of New Jersey, Newark, NJ
\textsuperscript{c}Center for Health Outcomes and Policy Research, School of Nursing, University of Pennsylvania, Philadelphia, PA

\textbf{Background:} Each year, nearly 7 million hospitalized patients acquire infections while being treated for other conditions. Nurse staffing has been implicated in the spread of infection within hospitals, yet little evidence is available to explain this association.

\textbf{Methods:} We linked nurse survey data to the Pennsylvania Health Care Cost Containment Council report on hospital infections and the American Hospital Association Annual Survey. We examined urinary tract and surgical site infection, the most prevalent infections reported and those likely to be acquired on any unit within a hospital. Linear regression was used to estimate the effect of nurse and hospital characteristics on health care–associated infections.

\textbf{Results:} There was a significant association between patient-to-nurse ratio and urinary tract infection (0.86; \(P = .02\)) and surgical site infection (0.93; \(P = .04\)). In a multivariate model controlling for patient severity and nurse and hospital characteristics, only nurse burnout remained significantly associated with urinary tract infection (0.62; \(P = .03\)) and surgical site infection (1.56; \(P < .01\)) infection. Hospitals in which burnout was reduced by 30% had a total of 6,239 fewer infections, for an annual cost saving of up to $68 million.

\textbf{Conclusions:} We provide a plausible explanation for the association between nurse staffing and health care–associated infections. Reducing burnout in registered nurses is a promising strategy to help control infections in acute care facilities.
... AND UNFAVORABLE EMPLOYEE OUTCOMES

Teamwork Climate Scores Across Facility

<table>
<thead>
<tr>
<th>Department</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCU</td>
<td>28</td>
</tr>
<tr>
<td>REHAB</td>
<td>33</td>
</tr>
<tr>
<td>OR</td>
<td>36</td>
</tr>
<tr>
<td>EMERG</td>
<td>41</td>
</tr>
<tr>
<td>5 WEST</td>
<td>45</td>
</tr>
<tr>
<td>6 WEST</td>
<td>45</td>
</tr>
<tr>
<td>PEDS</td>
<td>49</td>
</tr>
<tr>
<td>GERI</td>
<td>49</td>
</tr>
<tr>
<td>DIALYSIS</td>
<td>51</td>
</tr>
<tr>
<td>PERIOP</td>
<td>52</td>
</tr>
<tr>
<td>PHARM</td>
<td>55</td>
</tr>
<tr>
<td>3 WEST</td>
<td>62</td>
</tr>
<tr>
<td>ICU</td>
<td>62</td>
</tr>
<tr>
<td>NICU</td>
<td>73</td>
</tr>
<tr>
<td>SICU</td>
<td>75</td>
</tr>
<tr>
<td>Peds</td>
<td>80</td>
</tr>
<tr>
<td>OB</td>
<td>98</td>
</tr>
</tbody>
</table>

<60% Score = Danger Zone

Illustrative Data: Extracted from Blinded Client Data

- Employee Satisfaction 55
- Employee Injury per 1000 days 16
- Employee Absenteeism per 1000 days 15
- RN Vacancy Rate 9

Employee Satisfaction 91
Employee Injury per 1000 days 0.1
Employee Absenteeism per 1000 days 10
RN Vacancy Rate 1
Nurse input is well received in this clinical area.

Overall Score for 61

% who responded Agree or Strongly Agree

Groups 45
OR Nurse Scrub and Circ
Surgical Residents/Fellows
CRNA
PreOp/PreAnes
Evaluation Staff
Surgical Technicians
Staff
Surgeon/Surgical
Anesthesiology
Other

Goal Zone

Danger Zone
Wrong Site Surgery or Retained Foreign Body in 17 Operating Rooms

RN vs. Surgeon Safety Climate Attitudes (Post-SAQ Scores)

Operating Rooms

Safe & Reliable Healthcare
Psychological Safety

**GENERATIVE**
Organization wired for safety and improvement

**PROACTIVE**
Playing offense - thinking ahead, anticipating, solving problems

**SYSTEMATIC**
Systems in place to manage hazards

**REACTIVE**
Playing defense – reacting to events

**UNMINDFUL**
No awareness of safety culture

- Primary responsibility of leaders, continuously modeled everywhere.
- Leaders model and expect the behaviors that promote psychological safety.
- In some units it feels safe to speak up and voice a concern.
- Personality dependent – it depends who I’m working with.
- Fear based – keep your head down and stay out of trouble.

Safe & Reliable Healthcare
Social and Environmental Conditions Creating Fluctuating Agency for Safety in Two Urban Academic Birth Centers

Audrey Lyndon

ABSTRACT

Objective: To identify processes affecting agency for safety among perinatal nurses, physicians, and certified nurse-midwives.

Design: Grounded theory, as informed by Strauss and Schatzman.

Setting: Two academic perinatal units in the western United States.

Participants: Purposive sample of 12 registered nurses, 5 physicians, and 2 certified nurse-midwives.

Findings: Agency for safety (the willingness to take a stand on an issue of concern) fluctuated for all types of providers depending on situational context and was strongly influenced by interpersonal relationships. While physicians and certified nurse-midwives believed that they valued nurses' contributions to care, their units had deeply embedded hierarchies. Nurses were structurally excluded from important sources of information exchange and from contributing to the plan of care. Nurses' confidence was a key driver for asserting their concerns. Confidence was undermined in novel or ambiguous situations and by poor interpersonal relationships, resulting in a process of redefining the situation as a problem of self.

Conclusions: Women and babies should not be dependent on the interpersonal relationships of providers for their safety. Clinicians should be aware of the complex social pressures that can affect clinical decision making. Continued research is needed to fully articulate facilitators and barriers to perinatal safety.

JOGNN, 37, 13-23; 2008. DOI: 10.1111/J.1552-6909.2007.00204.x

Accepted October 2007
Psychological Safety Is Local

In this clinical area, it is difficult to speak up if I perceive a problem with patient care.

Note: Use the multicolored bars to see how you fit with the benchmark archive. If you have less red and more green than the benchmark, you are more positive than the benchmark. If the colors all match up, you are about the same as the benchmark.
Psychological Safety

We are our own image consultants and best image protectors

To protect one’s image, if you don’t want to look

STUPID

Don’t ask questions

INCOMPETENT

Don’t ask for feedback

NEGATIVE

Don’t be doubtful or criticize

DISRUPTIVE

Don’t suggest anything innovative

PSYCHOLOGICAL SAFETY CHANGES THIS PARADIGM

Source: Amy Edmondson

Safe & Reliable Healthcare
Organizational Fairness / Just Culture

- **GENERATIVE**
  Organization wired for safety and improvement

- **PROACTIVE**
  Playing offense - thinking ahead, anticipating, solving problems

- **SYSTEMATIC**
  Systems in place to manage hazards

- **REACTIVE**
  Playing defense – reacting to events

- **UNMINDFUL**
  No awareness of safety culture

- **REAL EVENTS SHARED**
  Leaders, true culture of accountability and learning

- **CLEAR DIFFERENTIATION**
  Individual v. system error, safe to discuss mistakes

- **LEARNING IS THE PRIORITY**
  Well understood algorithm, learning is the priority

- **DEPENDS WHO THE BOSS IS**
  Blame and punishment are common

- **NOTHING GOOD WILL COME**
  Talking about mistakes

---

**Safe & Reliable Healthcare**
### Perspectives on Human Error – Sidney Dekker

<table>
<thead>
<tr>
<th>Old View</th>
<th>New View</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human error is a cause of trouble</td>
<td>Human error is a symptom of deeper system trouble</td>
</tr>
<tr>
<td>You need to find people’s mistakes, bad judgments and inaccurate assessments</td>
<td>Instead, understand how their assessments and actions made sense at the time — context</td>
</tr>
<tr>
<td>Complex systems are basically safe</td>
<td>Complex systems are basically unsafe</td>
</tr>
<tr>
<td>Unreliable, erratic humans undermine system safety</td>
<td>Complex systems are tradeoffs between competing goals — safety v. efficiency</td>
</tr>
<tr>
<td>Make systems safer by restricting the human contribution</td>
<td>People must create safety through practice at all levels</td>
</tr>
</tbody>
</table>
Drift = Risk

100% Agreement Non-acceptable

Usual Space Of Action

‘Illegal normal’ Real Life standards 60-90%

100% Expected safe space of action as defined by professional standards

Safety Reg’s & good practices, accreditation standards

ACCIDENT

HIGH Production Performance LOW

Very Unsafe Space

100%

Agreement Non-acceptable

Illegal normal’ Real Life standards 60-90%

Expected safe space of action as defined by professional standards

Safety Reg’s & good practices, accreditation standards

Accident
Little Things Can Cause Big Problems

• Room 20
• Look out the window
• A simple knee scope
• He’s OK – he’s not too sedated - you go home
• What it says on the box is not what’s in the box
Drawing the Bright Line - Accountability

Malicious
Substance Use
Violation of Rules

Repeat Events?

Substitution Test – could 2-3 others make the same mistake?

System Derived Error
Safe Harbor

Reason, James
Avoidable Patient Harm

- 30% of hospitalized patients have something happen to them you and I wouldn’t want to happen to us
- 6% are harmed seriously enough to stay in the hospital longer and go home with a disability
- >200,000 Medicare patients die every year from medical harm

Safe & Reliable Healthcare
Process Improvement

- Unit level learning systems, continuous learning aligned with organizational goals
- Robust unit level learning and improvement is the norm
- Knowledge of testing, process improvement, collaborative work
- We try harder after process failures or adverse events
- Lots of first order problem solving, simple things don’t get fixed

Safe & Reliable Healthcare
Debriefing – Linking teamwork and Improvement

- What did we do well?
- What did we learn so we can do it better the next time?
- What got in the way that needs to be fixed?
Acute Medicines Unit, Ninewells Hospital, Dundee, Scotland - Arun Chaudhuri, Medical Director
### Mercy Regional Medical Center

![Turtle Board Image]

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Defects</td>
<td>117</td>
</tr>
<tr>
<td>% of Defects Completed</td>
<td>43%</td>
</tr>
<tr>
<td>% Of Defects In Progress</td>
<td>41%</td>
</tr>
<tr>
<td>% of Defects Not in Progress</td>
<td>11%</td>
</tr>
<tr>
<td>Defects without movement in &gt;30 Day:</td>
<td>33</td>
</tr>
<tr>
<td>Defects without movement in &gt;60 Day:</td>
<td>27</td>
</tr>
</tbody>
</table>

© Mercy 2010 ‘Turtle Board’