Assessing Safety Culture: A Theory Driven Approach to Understanding Results

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Objectives

1. Define safety culture from an organizational psychology perspective
2. Explain why it is important to devote organizational resources to measure and improve safety culture
3. Use appropriate internal and external benchmarks to interpret Hospital Survey on Patient Safety Culture results
4. Use theoretical frameworks to interpret HSOPS results: Reason’s components of safety culture, Schein’s Levels of Culture, Edmondson’s Psychological Safety & Accountability
5. Identify key evidence-based interventions to improve each component of safety culture
Objective 1.

1. Define safety culture from an organizational psychology perspective

   • Definition
   • Role of Organizational Culture
   • Categories of Culture
   • 3 Levels of Culture
   • 4 Components of Culture
Definition

• LEARNED\textsuperscript{1}, shared, enduring, beliefs and behaviors that reflect an organization’s *willingness to learn from errors*\textsuperscript{2}

• Four beliefs present in a safe, informed culture\textsuperscript{3}
  – Our processes are designed to prevent failure
  – We are committed to detect and learn from error
  – We have a just culture that disciplines based on risk taking
  – People who work in teams make fewer errors
The Role of Organizational Culture

Organizational Culture\(^1\)
- Allows us to make sense of environment
- Reflects common language... is heard and observed
- Leaders create/teach culture
  - Share information
  - Reward, provide feedback
  - Hold people accountable

Safety Culture\(^4\)
- A cross cutting contextual factor
- Moderates effectiveness of patient safety interventions
- Associated with adverse events and patient satisfaction
Categories of Culture

Macroculture

Organizational Culture

Subcultures

Schein, E.H. Organizational Leadership and Culture 4th ed.
San Francisco: John Wiley & Sons; 2010.

Microculture
“…values reflect desired behavior but are not reflected in observed behavior.” (Schein, 2010, pp. 24, 27)
1. Reporting Culture
2. Just Culture
3. Flexible (Teamwork) Culture
4. Learning Culture
   - Effective reporting and just cultures create atmosphere of trust\(^5\)
   - Sensemaking\(^6\) of patient safety events and high reliability result from an explicit plan to engineer behaviors from each component of safety culture
Objective 2.

2. Explain why it is important to devote organizational resources to measure and improve safety culture

• Institute of Medicine Reports
• Regulatory Requirement/ Joint Commission
• High Reliability Organizations engage in continuous improvement
• Safety culture is associated with adverse events and patient satisfaction
“The problem is not bad people; the problem is that the system needs to be made safer . . .”

IOM (2000). To Err is Human: Building a Safer Health System

“The biggest challenge to moving toward a safer health system is changing the culture from one of blaming individuals for errors to one in which errors are treated not as personal failures, but as opportunities to improve the system and prevent harm.”

IOM (2001). Crossing the Quality Chasm: A New Health System for the 21st Century, p. 79
Regulatory Requirements

• Joint Commission 2010 Leadership Standards for hospitals (Standard LD.03.01.01)
  – Leaders create and maintain a culture of safety
  – Leaders evaluate the culture on a regular basis
  – Leaders encourage teamwork; they create structures, processes, and programs to support it

• National Quality Forum Safe Practice 2: Culture Measurement, Feedback, and Intervention

We cannot change what we do not measure!
Higher HSOPS scores are associated with fewer adverse events, which validates patient safety culture assessment as a meaningful indication of the safety of patients.

**FIGURE 1.** Scatter plot of PSI composite versus HSOPS composite average ($N = 179$).
“....behaviors and attitudes [of hospital employees] can directly affect the pain, discomfort, health, and recovery of patients.”

FIGURE 1. Scatter plot of CAHPS hospital survey composite average score and Hospital SOPS composite average score (N = 73 hospitals; $r = 0.41$, $P < 0.01$) exploring relationships between patient safety culture and patients’ assessments of hospital care.
The Bottom Line...

Improving safety culture increases likelihood of success of all other patient safety interventions.
Objective 3.

3. Use appropriate internal and external benchmarks to interpret Hospital Survey on Patient Safety Culture results

- General goals of culture assessment
- Hospital Survey on Patient Safety Culture (HSOPS) can be benchmarked internally and externally
Goals of Culture Assessment $^{1,9,10}$

- Identify areas of culture in need of improvement
  - Identify impairments in organizational learning
  - Create road map for improvement of infrastructure that supports all safety and quality initiatives
- Increase awareness of patient safety concepts
- Evaluate effectiveness of patient safety interventions over time
- Conduct internal and external benchmarking,
- Meet regulatory requirements
- *Identify gaps between beliefs and observed behaviors within subcultures and microcultures*
Measure Beliefs and Behaviors with HSOPS

- Survey tool kit available

- Comparative Database for external benchmarking
  567,703 respondents from 1,128 hospitals in 2012 database

- 42 items categorized in 12 dimensions
  - 2 dimensions outcome measures at dept/unit level
  - 7 dimensions measure culture at dept/unit level
  - 3 dimensions measure culture at hospital level

- 2 additional outcome measures at dept/unit level

- Sort by work area/job title for internal benchmarking

- Comments
Reverse-Worded Items

• Score reported is “percent positive”
  – Percentage of responses rated 4 or 5 (Agree/Strongly agree or Most of the Time/Always) for positively-worded items, or 1 or 2 (Disagree/Strongly Disagree or Rarely/Never) for reverse-worded items

• Positive is positive for patient safety, higher score better
  – We work in “crisis mode” trying to do too much, too quickly. (A14R)

• 8 of 12 composites have at least 1 reverse-worded item

• 2 Composites all items reverse-worded
  – Handoffs & Transitions
  – Nonpunitive Response to Error

• Why use reverse-wording?
Reverse-Worded Items

- If Item labeled with “R” then it is positive to DISAGREE
- Bigger numbers always better
- Positive is positive for patient safety

12. Nonpunitive Response to Error

1. Staff feel like their mistakes are held against them. (A8R)

2. When an event is reported, it feels like the person is being written up, not the problem. (A12R)

3. Staff worry that mistakes they make are kept in their personnel file. (A16R)

* Green Bar = % DISAGREE/STRONGLY DISAGREE for REVERSE-WORDED ITEMS
External Benchmarking ICUs

HSOPS Composite Positive Results

- ICU State Average
- Your Unit’s Results
- ICUs 2012 National Database (723 hospitals)
External Benchmarking Hospitals

Hospital Survey on Patient Safety Culture Composite Positive Responses
Comparison To National Database

Sample Hospital 2011 (n=xxx)
10th %ile 2011 National Database (1032 hospitals)
90th %ile 2011 National Database (1032 hospitals)

Overall Perceptions of Safety
Frequency of Events Reported
Manager Actions Promoting Safety
Organizational Learning
Teamwork Within Departments
Communication Openness
Feedback & Communication About Error
Nonpunitive Response to Error
Staffing
Hospital Mgt Support for Safety
Teamwork Across Departments
Hospital Handoffs & Transitions
Purpose of External Benchmarking

Identify areas in need of improvement: general recommendations

- Below State or National average OR closer to 10th percentile than 90th percentile
- Less than 75% positive
- Large “gap” between beliefs and behaviors, between less-structured behaviors and more structured behaviors within the composites
Internal Benchmarking Job Title

HSOPS Composite Positive Results

- Your Unit’s Nurse Results (n= )
- Your Unit’s Non-Nurse Results (n= )

Graph showing various aspects of job performance with lines for nurse and non-nurse results.
Internal Benchmarking Work Areas

Hospital Survey on Patient Safety Culture Composite Positive Responses

Comparison by Department

- Sample Hospital 2012 (n=153)
- Surgery Oper. Room (n=22)
- Lab (n=7)
- Emergency (n=11)
- Acute/ Skilled Care (n=47)
- Radiology (n=6)
- Pharmacy (n=5)

Overall Perceptions of Safety
Frequency of Events Reported
Manager Actions Promoting Safety
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Teamwork W/in Deppts
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Feedback & Communication about Error
Nonpunitive Response to Error
Staffing
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Teamwork Across Hosp Depts
Hospital Handoffs & Transitions

Sample Hospital 2012 (n=153)
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Comparison by Department

Hospital Survey on Patient Safety Culture Composite Positive Responses

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Pharmacy (n=5)
Purpose of Internal Benchmarking

Identify variability between professional subcultures (job titles) and microcultures (work areas)

• Work area (unit/dept) outliers as compared to facility average
• Job title outliers as compared to facility average
• Variability in gaps between work areas and between job titles
4. Use theoretical frameworks to interpret HSOPS results

- Reason’s components of safety culture\(^5\)
- Schein’s Levels of Culture: identify gaps between beliefs and behaviors; between less structured behaviors and more structured behaviors\(^1\)
- Psychological Safety & Accountability\(^11\)

5. Identify evidence-based interventions to improve components of safety culture
<table>
<thead>
<tr>
<th>Reason’s Components⁵</th>
<th>HSOPS Dimension or Outcome Measure</th>
</tr>
</thead>
</table>
| Reporting Culture - a safe organization is dependent on the willingness of frontline workers to report their errors and near-misses | • Frequency of Events Reported (U)  
• Number of Events Reported (O, H) |
| Just Culture - management will support and reward reporting; discipline occurs based on risk-taking | • Nonpunitive Response to Error (U) |

O = Outcome measure  
U = Measured at level of unit/department  
H = Measured at level of hospital
<table>
<thead>
<tr>
<th>Reason’s Components&lt;sup&gt;5&lt;/sup&gt;</th>
<th>HSOPS Dimension or Outcome Measure</th>
</tr>
</thead>
</table>
| **Flexible Culture** - authority patterns relax when safety information is exchanged because those with authority respect the knowledge of front-line workers | • Teamwork w/in Units (U)  
• Staffing (U)  
• Communication Openness (U)  
• Teamwork ax Units (H)  
• Hospital Handoffs (H) |
| **Learning Culture** - organization will analyze reported information and then implement appropriate change | • Hospital Mgt Support (H)  
• Manager Actions (U)  
• Feedback & Communication (U)  
• Organizational Learning (U)  
• Overall Perceptions of Safety (U)  
• Patient Safety Grade (O, U) |
Teamwork within Departments 2009

1. People support one another in this department. (A1)
   - 85% in green, 5% in red, 9% in yellow

2. When a lot of work needs to be done quickly, we work together as a team to get the work done. (A3)
   - 86% in green, 6% in red, 8% in yellow

3. In this department, people treat each other with respect. (A4)
   - 75% in green, 12% in red, 13% in yellow

4. When one area in this department gets really busy, others help out. (A11)
   - 61% in green, 24% in red, 15% in yellow

Teamwork Within Departments Composite Score = 77%

24% GAP
Teamwork Within Departments Composite Score = 85%

Practices/skills that bridge the gap

- Identify team leaders
  - Set team goals
  - Use briefs, huddles, debriefs
- Create shared mental model (Situation monitoring – mutual support)
  - Cross monitor (“watch each others’ back”)
  - Seek & offer task assistance
Communication Openness 2009

1. Staff will freely speak up if they see something that may negatively affect patient care. (C2)

2. Staff feel free to question the decisions or actions of those with more authority. (C4)

3. Staff are afraid to ask questions when something does not seem right. (C6)

Communication Openness Composite Score = 64%

28% GAP
Communication Openness 2012

1. Staff will freely speak up if they see something that may negatively affect patient care. (C2)

2. Staff feel free to question the decisions or actions of those with more authority. (C4)

3. Staff are afraid to ask questions when something does not seem right. (C6R)

Communication Openness Composite Score = 73%

Practices/skills that bridge the gap
• Structured communication
  ✓ SBAR, Call-Out, Check-back
  ✓ Advocacy and assertion, 2 Challenge Rule, CUS
  ✓ I PASS the BATON for structured handoffs

GAP = 22%
Feedback & Communication Composite Score = 64%
Feedback and Communication Composite Score = 77%

**Practices/skills that bridge the gap**

- Leadership closes the loop with front line workers (WalkRounds, LFLE)
- Shared mental model about structures/processes
  - Policies and procedures reviewed regularly
  - Processes are mapped
- Tools used to understand system sources of error
  - Individual & aggregate root cause analysis
  - Failure mode & effect analysis
Handoffs & Transitions 2009

R1. Things “fall between the cracks” when transferring patients from one department to another. (F3)
58% 27% 14%

R2. Important patient care information is often lost during shift changes. (F5)
50% 33% 17%

R3. Problems often occur in the exchange of information across hospital departments. (F7)
50% 31% 20%

R4. Shift changes are problematic for patients in this hospital. (F11)
46% 42% 13%

Handoffs & Transitions Composite Score = 51%

8% GAP
Practices/skills that bridge the gap

- Structured communication
  - SBAR, Check-back
  - Advocacy and assertion, 2 Challenge Rule, CUS
  - I PASS the BATON for structured handoffs
- Leadership Tools
  - Set team goals
  - Use briefs, huddles, debriefs

Handoffs & Transitions Composite Score = 60%
1. We are actively doing things to improve patient safety. (A6)

2. Mistakes have led to positive changes here. (A9)

3. After we make changes to improve patient safety, we evaluate their effectiveness. (A13)

Organizational Learning Composite Score = 77%

Organizational Learning 2009
1. We are actively doing things to improve patient safety. (A6)

- 93%

2. Mistakes have led to positive changes here. (A9)

- 81%

3. After we make changes to improve patient safety, we evaluate their effectiveness. (A13)

- 79%

Organizational Learning Composite Score = 84%

**Practices/skills that bridge the gap**

- Briefs, huddles, debriefs
- Safety Briefings
- Leadership WalkRounds, LFLE
- Tools used to understand system sources of error
  - Individual & aggregate root cause analysis
  - Failure mode & effect analysis
1. Hospital Management provides a work climate that promotes patient safety. (F1)

2. The actions of hospital management show that patient safety is a top priority. (F8)

R3. Hospital management seems interested in patient safety only after an adverse event happens. (F9)

Hospital Mgt. Support for Patient Safety Composite Score = 86%

13% GAP
1. Hospital management provides a work climate that promotes patient safety. (F1)

2. The actions of hospital management show that patient safety is a top priority. (F8)

3. Hospital management seems interested in patient safety only after an adverse event happens. (F9R)

Hospital Mgt. Support for Patient Safety Composite Score = 90%

Practices/skills that bridge the gap

- Initiatives to improve safety culture
  - TeamSTEPPS Training 2009
  - New CEO 2010 (CNO moved to CEO position)
    - Focus on accountability
    - Training in Leadership for managers
  - Leadership WalkRounds 2011
Psychological Safety and Accountability

• Two distinct attributes of a work environment that result from leadership behavior

• Accountability: degree to which people are expected to adhere to high standards and pursue challenging goals

• Psychological safety: a climate in which people feel free to express relevant thoughts and feelings; a shared belief that it is safe to take interpersonal risks; work environment characterized by trust and mutual respect
  – Characteristic of a team/unit, not an individual
  – Varies from unit/department to unit/department
  – Created by the actions/behaviors of leaders

Edmondson, AC. Making it safe to team. 2012
Interpersonal risks of speaking up: fear that you will be perceived as...
- Ignorant
- Incompetent
- Negative
- Disruptive

Benefits of psychological safety
- Encourages speaking up
- Improves clarity of thought (shared mental models)
- Supports productive conflict
- Prevents failure
- Promotes innovation
- Increases employee accountability
Psychological Safety and Accountability

Edmondson, AC. Making it safe to team. In teaming: How organizations learn, innovate and compete in the knowledge economy. San Francisco: Jossey-Bass; 2012. p. 130
<table>
<thead>
<tr>
<th>Is it Safe to Learn?</th>
<th>HSOPS Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Safety</td>
<td>Communication Openness</td>
</tr>
<tr>
<td></td>
<td>Supervisor Manager Expectations &amp; Actions Promoting Patient Safety (U)</td>
</tr>
<tr>
<td>Accountability</td>
<td>Supervisor Manager Expectations &amp; Actions Promoting Patient Safety (U)</td>
</tr>
<tr>
<td>Learning</td>
<td>Organizational Learning—Continuous Improvement</td>
</tr>
</tbody>
</table>
### HSOPS Reflects Psych Safety & Accountability

<table>
<thead>
<tr>
<th>Is it Safe to Learn?</th>
<th>Apathy?</th>
<th>Anxiety?</th>
<th>Learning?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supervisor Manager Expectations - Accountability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B1.</strong> My supv/mgr says a good word when he/she sees a job done according to established patient safety procedures.</td>
<td>35%</td>
<td>86%</td>
<td>92%</td>
</tr>
<tr>
<td><strong>B4R.</strong> My supv/mgr overlooks patient safety problems that happen over and over.</td>
<td>50%</td>
<td>70%</td>
<td>92%</td>
</tr>
<tr>
<td><strong>Psychological Safety</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B2.</strong> My supv/mgr seriously considers staff suggestions for improving patient safety.</td>
<td>38%</td>
<td>75%</td>
<td>95%</td>
</tr>
<tr>
<td><strong>C4.</strong> Staff feel free to question the decisions or actions of those with more authority.</td>
<td>22%</td>
<td>23%</td>
<td>45%</td>
</tr>
<tr>
<td><strong>C6R.</strong> Staff are afraid to ask questions when something does not seem right.</td>
<td>39%</td>
<td>36%</td>
<td>54%</td>
</tr>
<tr>
<td><strong>Organizational Learning</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A9.</strong> Mistakes have led to positive changes here.</td>
<td>41%</td>
<td>44%</td>
<td>81%</td>
</tr>
<tr>
<td><strong>A13.</strong> After we make changes to improve patient safety, we evaluate their effectiveness.</td>
<td>25%</td>
<td>64%</td>
<td>74%</td>
</tr>
</tbody>
</table>
Role of Leaders in Psychological Safety

• Be accessible and approachable; invite participation
  – Conduct briefs, huddles, debriefs; Leadership WalkRounds, Leverage Frontline Expertise; attends committee meetings
• Acknowledge what is known/unknown
• Don’t punish human error
  – Implement Just Culture
• Hold people accountable
  – Communicate clear expectations
  – Audit processes, provide feedback
Role of Leaders in Psychological Safety

“...most important influence on psychological safety is the nearest manager, supervisor, or boss.”
Objective 5.

5. Summary of key evidence-based interventions to improve each component of safety culture (refer to inventory of safe practices)
Reporting Interventions

**Successful Reporting Systems**¹²
- Nonpunitive
- Confidential
- Independent
- Expert analysis
- Timely
- Systems-oriented
- Responsive

- Formal Reporting of adverse events with standardized taxonomies (e.g. NCC-MERP A–I Error Severity Taxonomy)
- Near misses are frequently reported, valued, and learned from using anonymous log
- Non-harmful errors that reach the patient are frequently reported, valued, and learned from

- Informal Reporting – Safety Briefings¹³
- Informal Reporting – Leadership WalkRounds,¹⁴ Leveraging Frontline Expertise¹⁵
Just Culture Interventions

• Understand human fallibility
  – Nature of human error\(^5\) (active vs latent error)
  – Human factors\(^{16}\)
Just Culture Interventions

• Just Culture and behavior\textsuperscript{17-19}
  – Conduct: human error, negligence, reckless, intentional rule violation
  – Algorithm-based disciplinary decision-making\textsuperscript{5}
• Disruptive Behavior Policy/Standards\textsuperscript{20}

Adapted from David Marx
Unsafe Acts Algorithm

Team Strategies & Tools to Enhance Performance & Patient Safety

http://teamstepps.ahrq.gov

Adopting team behaviors positively impacts all components of safety culture because teamwork supports learning.²¹
Impact of Team Behaviors on Safety Culture

EVERY 5% Increase in team behaviors is significantly associated with an increased of ....

- 11% in communication openness
- 15% in teamwork within departments
- 22% in exchange of important patient information during shift change
- 24% in perception that hospital mgt is interested in patient safety before adverse events occur
- 25% in perception that serious mistakes don’t happen by chance
Ultimately, the willingness of workers to report depends on their belief that the organization will analyze reported information and then implement appropriate change—organizational practices support a *learning culture*.\(^5\)

**Practices/Tools**

- Process Mapping\(^22,23\)
- Individual RCA\(^24\)
- Aggregate RCA\(^25\)
- FMEA\(^26\)
- Safety Briefings\(^13\)
- Leadership WalkRounds,\(^14\)
  Leveraging Frontline Expertise\(^15\)
- Close the loop with reporting... provide feedback to frontline
The foundation of all safety culture interventions

- Leaders engage the frontline to learn from and with them about system problems
- Leaders hold frontline accountable for implementing and sustaining mutually agreed upon change

The Leveraging Frontline Expertise (LFLE) Cycle

- Information Gathering
- Feedback Communication
- Prioritization
- Follow-Up
Summary

• Safety culture is the learned, shared beliefs and behaviors that reflect willingness to learn

• Why is it important to devote resources to safety culture?
  – Improving safety culture increases likelihood of success of all other patient safety interventions
  – Safety culture is associated with adverse events and patient satisfaction

• Use theoretical frameworks to understand problems in safety culture and prioritize interventions for improvement

“If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions.” — Albert Einstein
Summary

- Prioritize needs to improve safety culture
  - Think in terms of Reason’s Four Components
  - Benchmark externally and internally
  - Identify gaps by comparing items within dimensions
- Choose interventions within each key component of safety culture (see inventory)
  - Effective reporting systems that capture near misses
  - Just culture,
  - Team training, implementation, and sustainment
  - Root cause analysis, Leveraging Frontline Expertise
- Keep in mind the end goal...to understand and use what the frontline knows about the system to plan, implement, and sustain change
References


18. Frankel AS, Leonard MW, Denham CR. Fair and just culture, team behavior, and leadership engagement: the tools to achieve high reliability. HSR. 2006;41(4),PartII:1690-1709.


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