Assessing Safety Culture: A Theory Driven Approach to Understanding Results

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- Roni Reiter-Palmon, PhD (I/O psychologist)
- Victoria Kennel, BS (I/O Psychology Graduate student)
- Regina Nailon, RN, PhD (nursing research)
- PT Student Researchers

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,[1] shared, enduring, beliefs and behaviors that reflect an organization's *willingness to learn from errors*[2]

- Four beliefs present in a safe, informed culture[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]

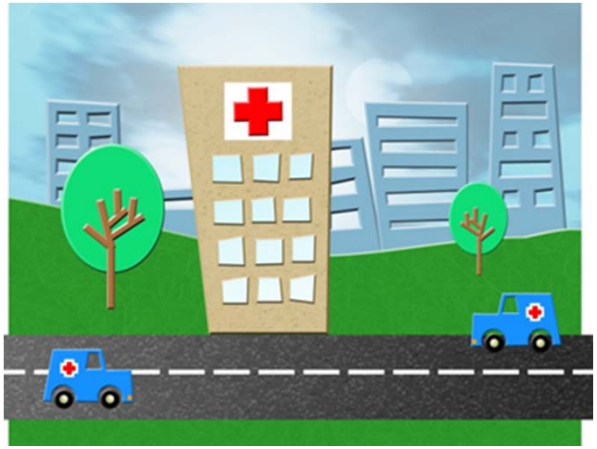
- Allows us to make sense of environment
- Reflects common language… is heard and observed
- Leaders create/teach culture
  - Share information
  - Reward, provide feedback
  - Hold people accountable

Safety Culture[4]

- A cross cutting contextual factor
- Moderates effectiveness of patient safety interventions
- Associated with adverse events and patient satisfaction

Categories of Culture[1]

Macroculture



Organizational Culture

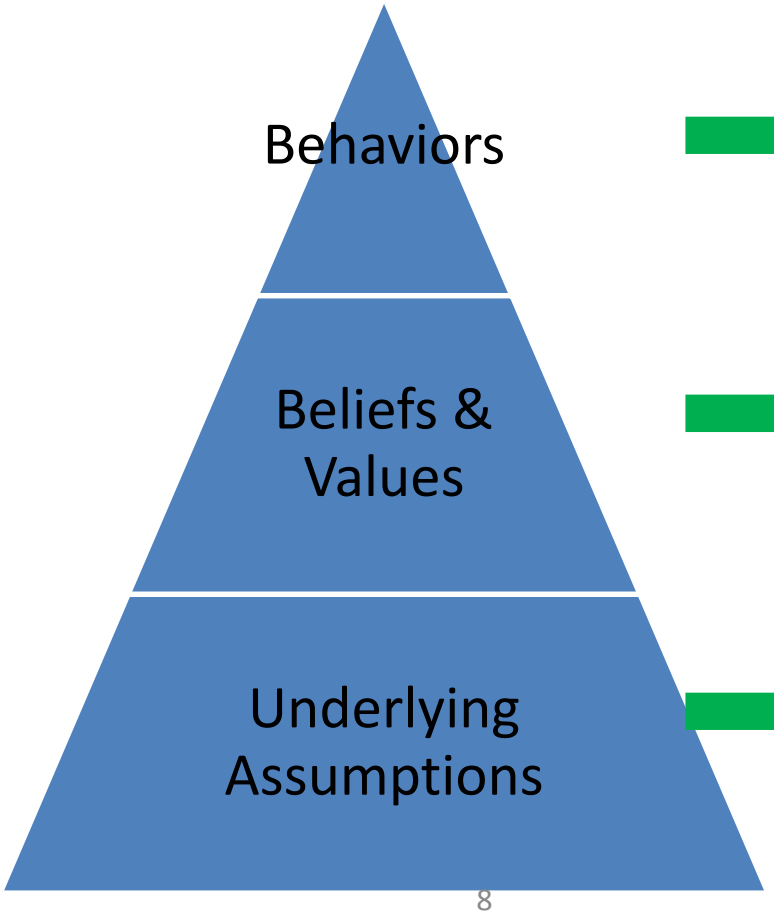
Subcultures

Microculture

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

Three Levels of Organizational Culture[1]

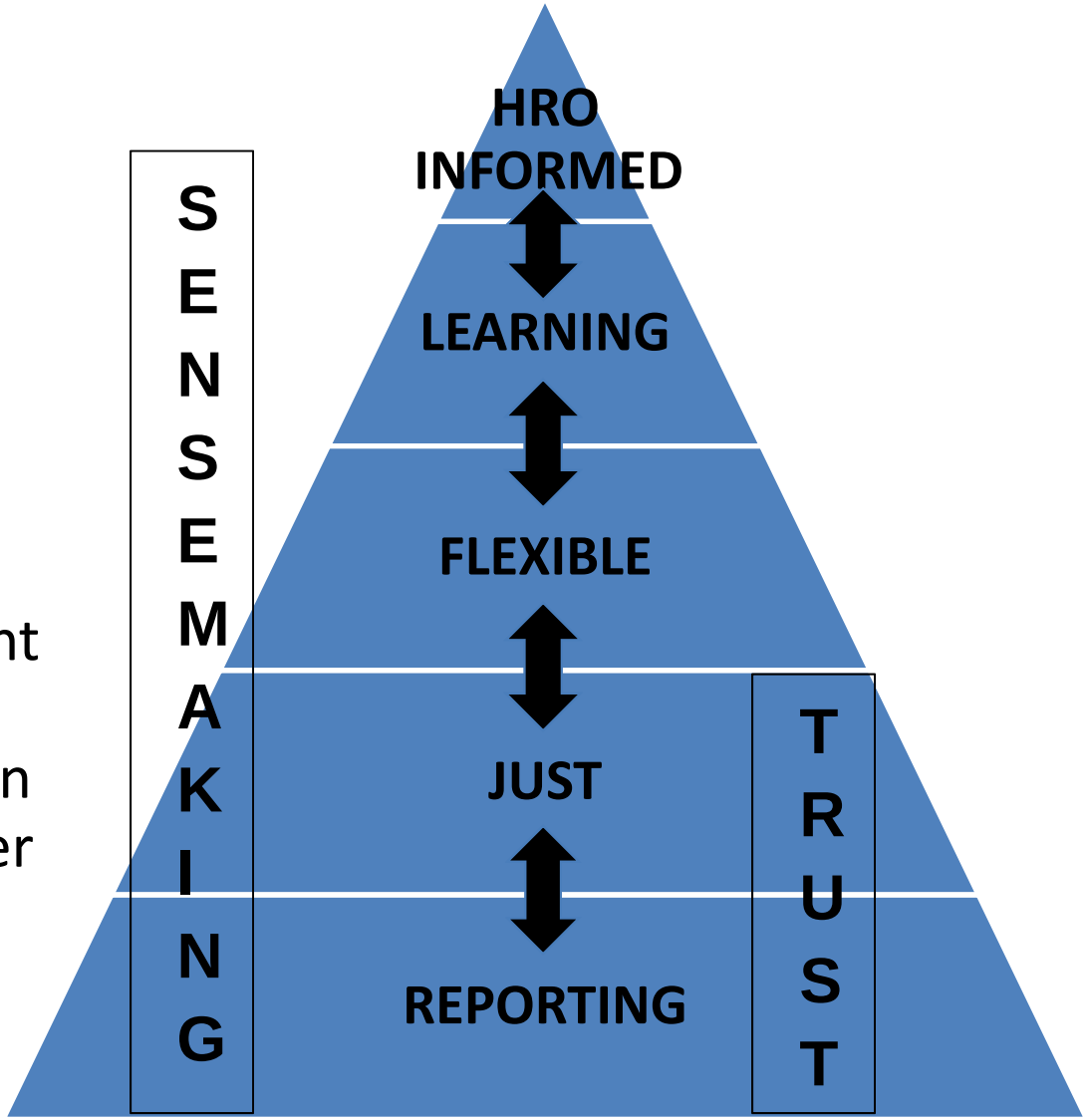
"…values reflect ***desired*** behavior but are not reflected in ***observed*** behavior." (Schein, 2010, pp. 24, 27)



Desired Behavior: Round to assess catheter appropriateness	**Observed Behavior:** Do not participate in rounds
Value: Teamwork	**Value:** Autonomy
Assumption: Safety is a system property	**Assumption:** Safety is a result of individual competency

Four Components of Safety Culture[5]

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.

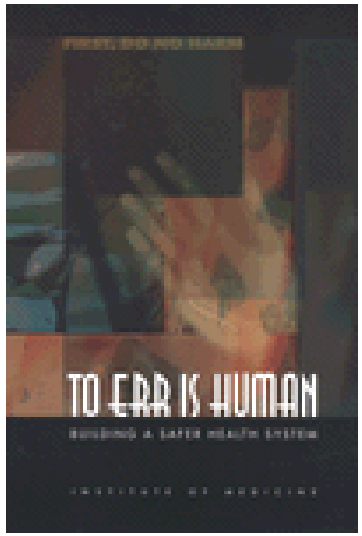
2. Explain why it is important to devote organizational resources to measure and improve safety culture

- 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

IOM Reports Identify the Challenge

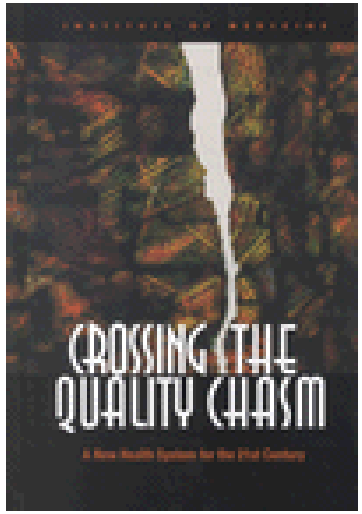
"The problem is not bad people; the problem is that the system needs to be made safer . . ."

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



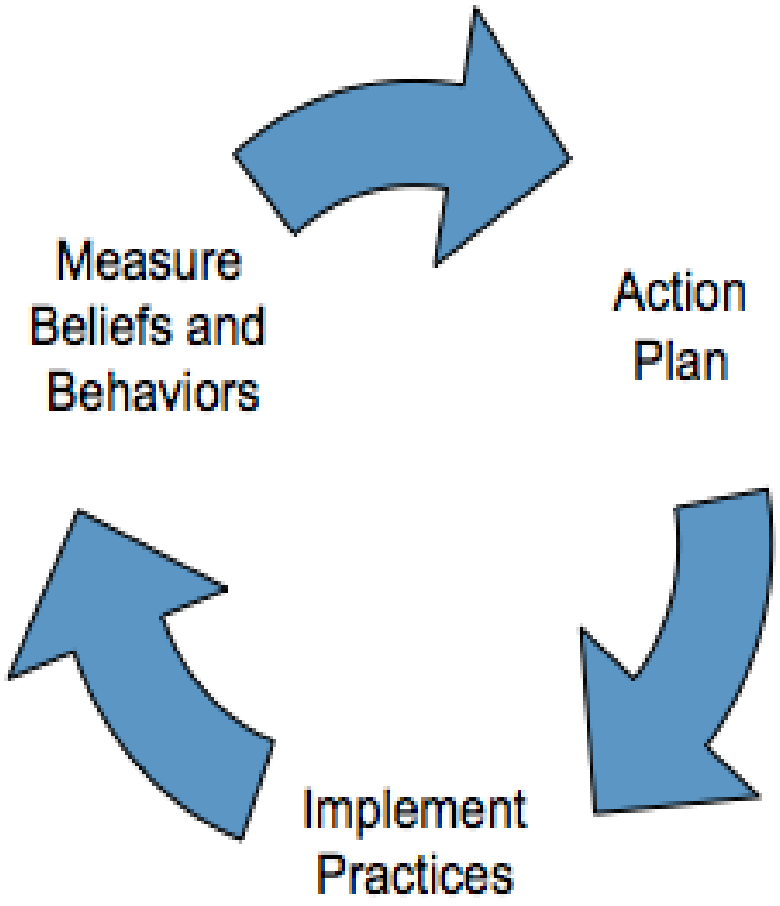
Regulatory Requirements

- 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

http://www.jcrinc.com/common/Documents/OnlineExtras/JCLS09/JCLS09_H.pdf
http://www.qualityforum.org/News_And_Resources/Press_Kits/Safe_Practices_for_Better_Healthcare.aspx

HROs Engage in Continuous Improvement



We can not change what we do not measure!

HSOPS and Patient Safety Events[7]

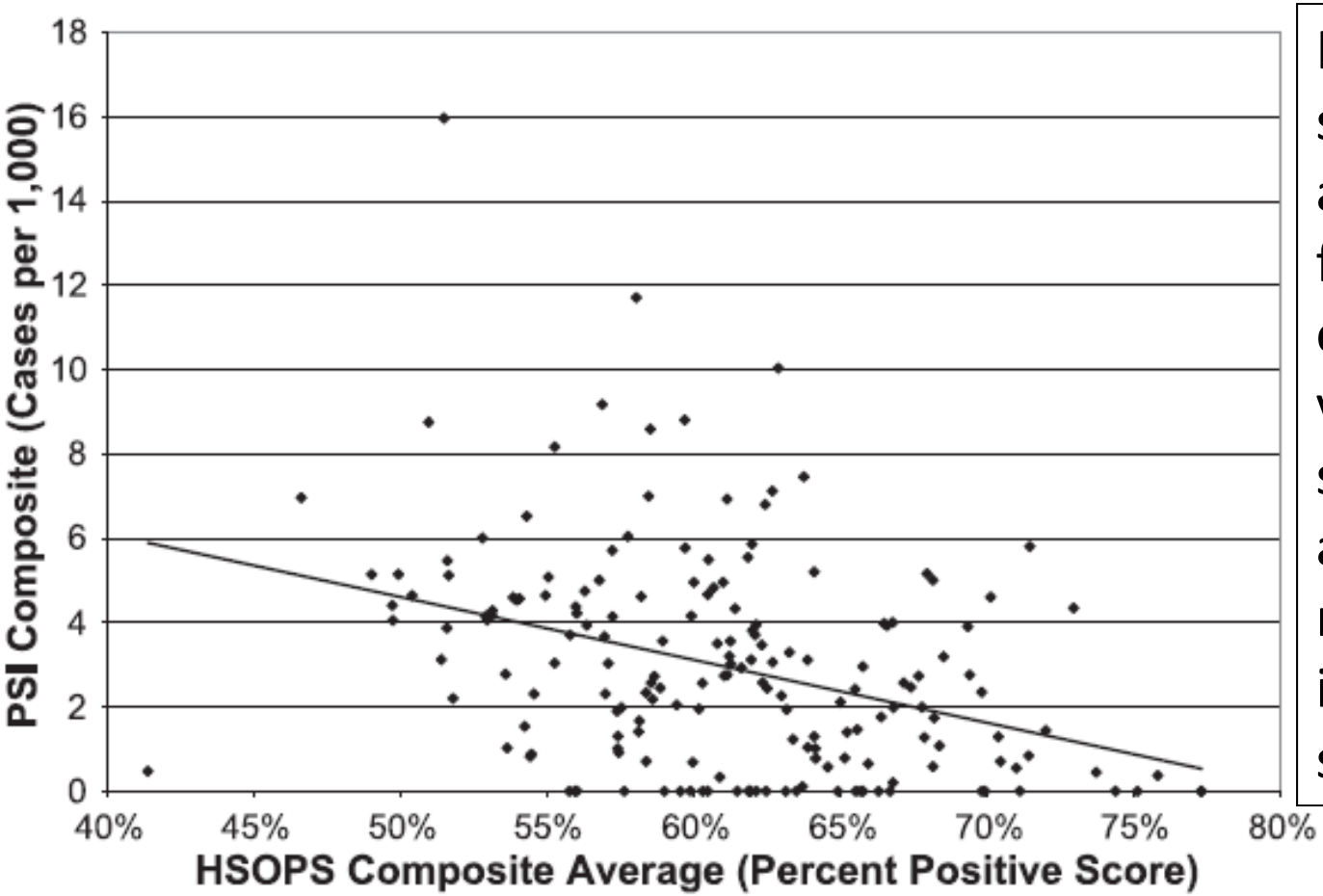


FIGURE 1. Scatter plot of PSI composite versus HSOPS composite average (N = 179).

Higher HSOPS scores are associated with fewer adverse events, which validates patient safety culture assessment as a meaningful indication of the safety of patients.

HSOPS and Patient Satisfaction[8]

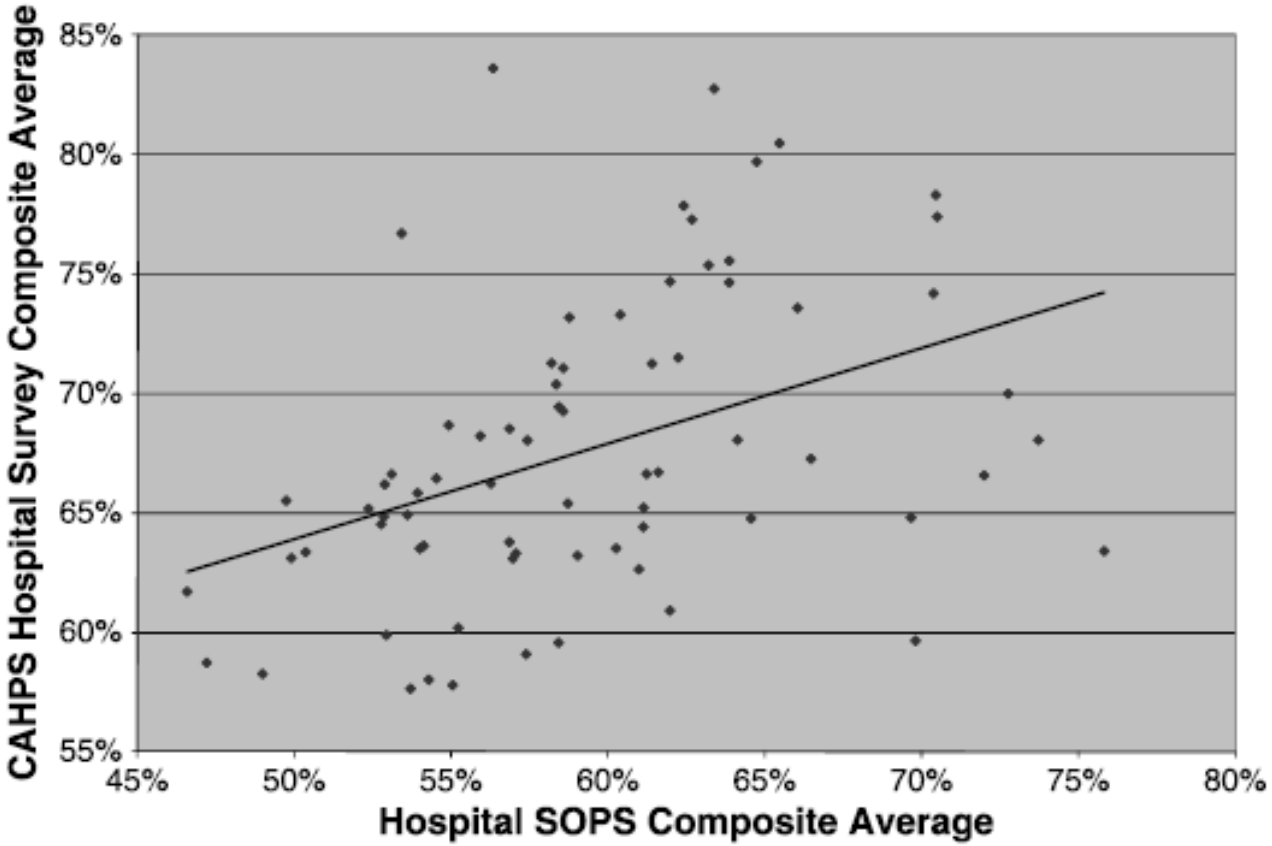


FIGURE 1. Scatter plot of CAHPS hospital survey composite average score and Hospital SOPS composite average score (N = 73 hospitals; $r = 0.41$, $P < 0.01$) exploring relationships between patient safety culture and patients' assessments of hospital care.

"….behaviors and attitudes [of hospital employees] can directly affect the pain, discomfort, health, and recovery of patients." [6]

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
  http://www.ahrq.gov/qual/patientsafetyculture/hospsurvindex.htm
- Comparative Database for external benchmarking
  http://www.ahrq.gov/qual/hospsurvey12/

  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

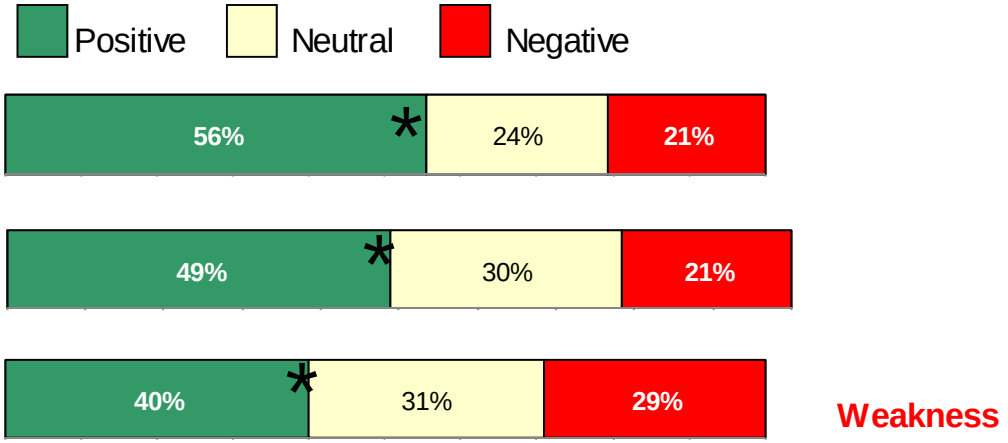
Reverse-Worded Items

- 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

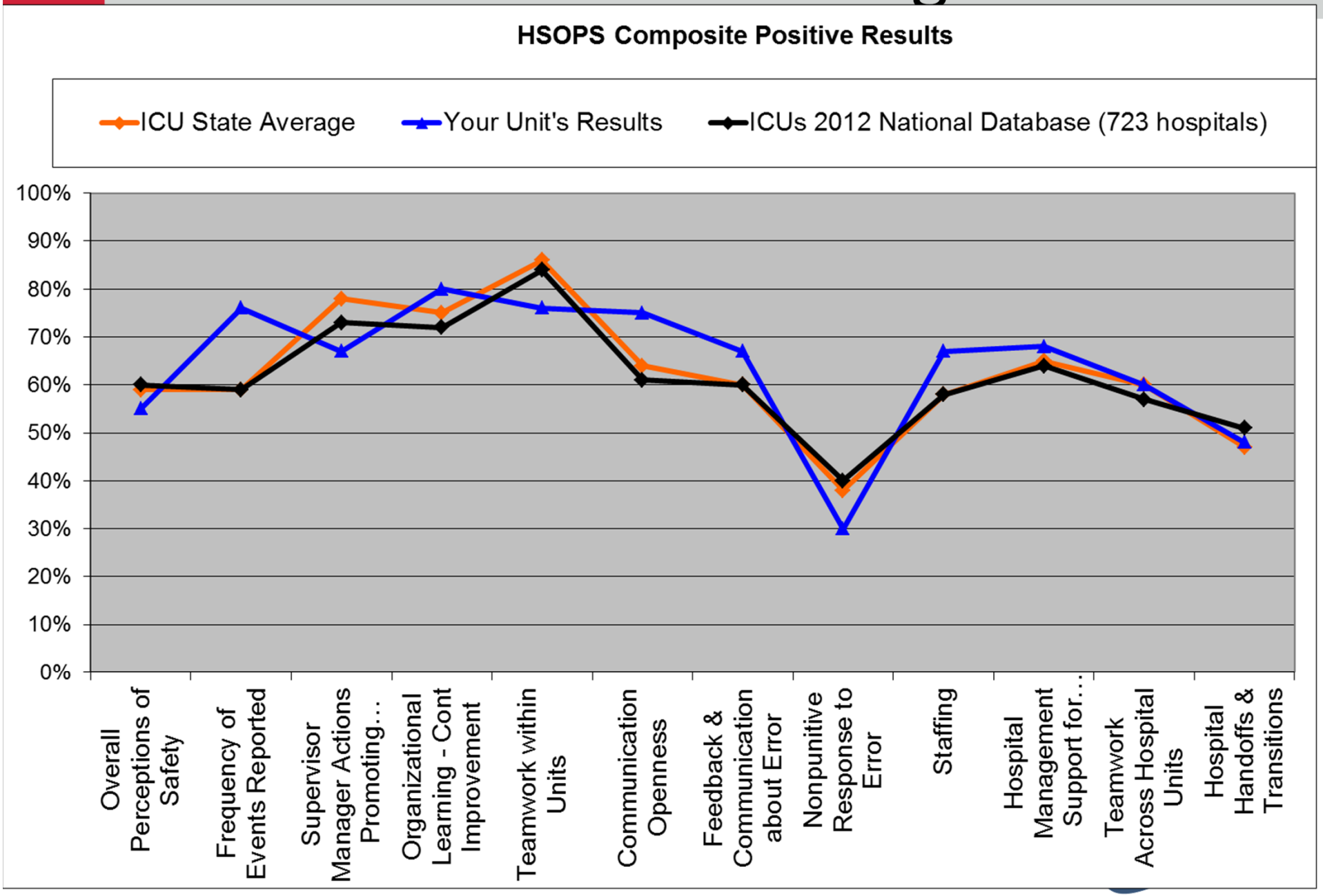
- If Item labeled with “R” then it is positive to DISAGREE
- Bigger numbers always better
- Positive is positive for patient safety

12. Nonpunitive Response to Error

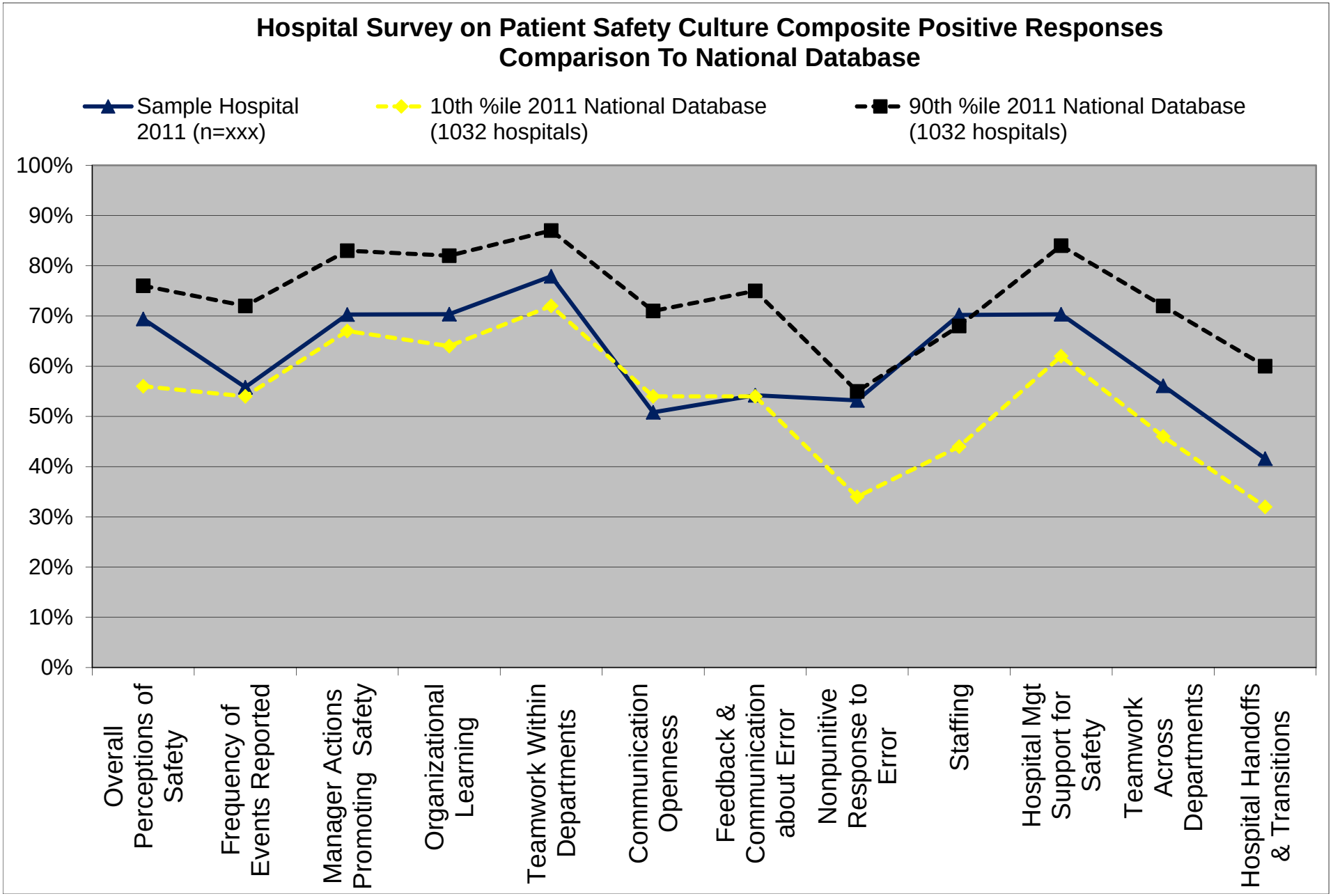


*Green Bar = % DISAGREE/STRONGLY DISAGREE for REVERSE-WORDED ITEMS

External Benchmarking ICUs



External Benchmarking Hospitals

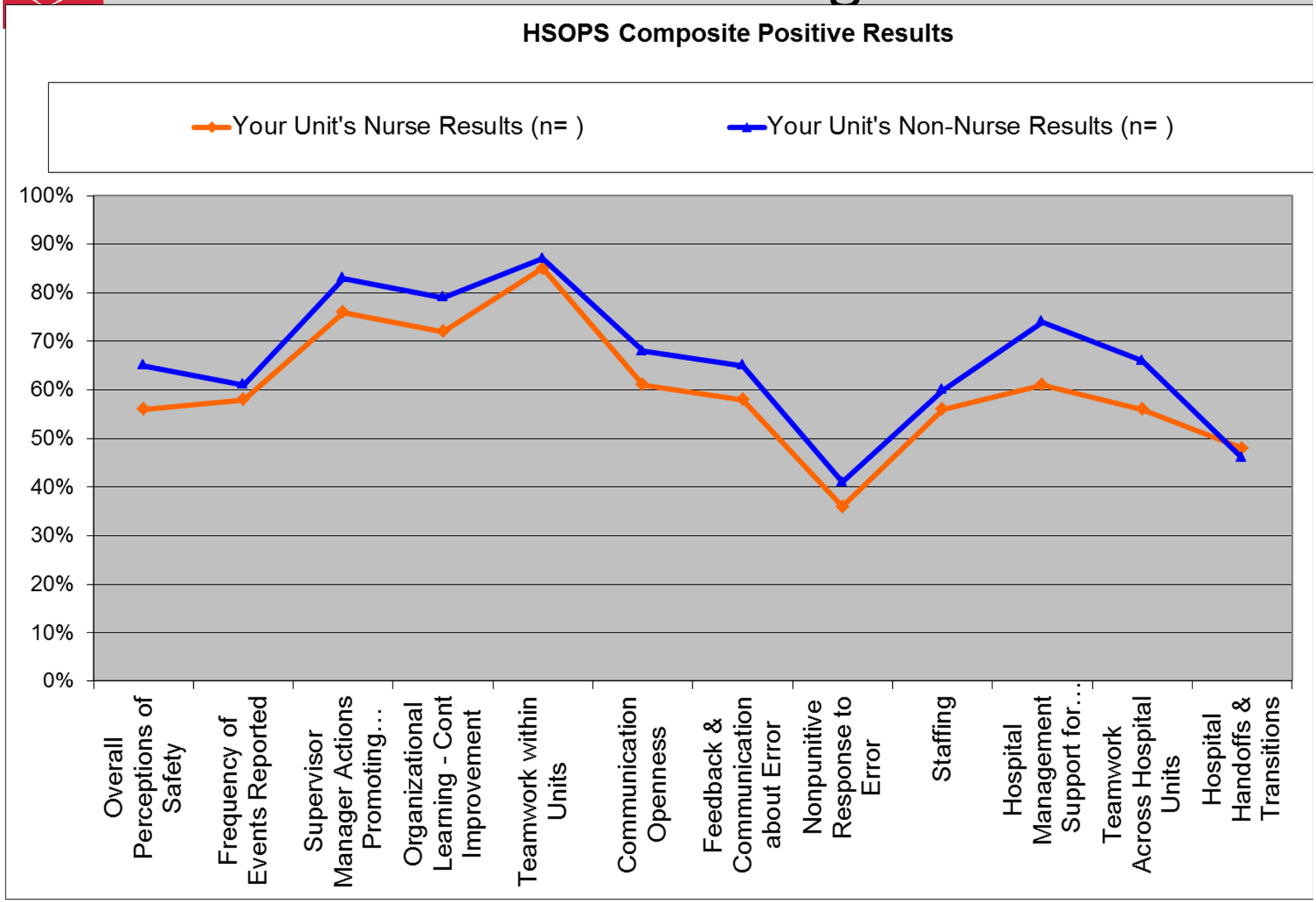


Purpose of External Benchmarking

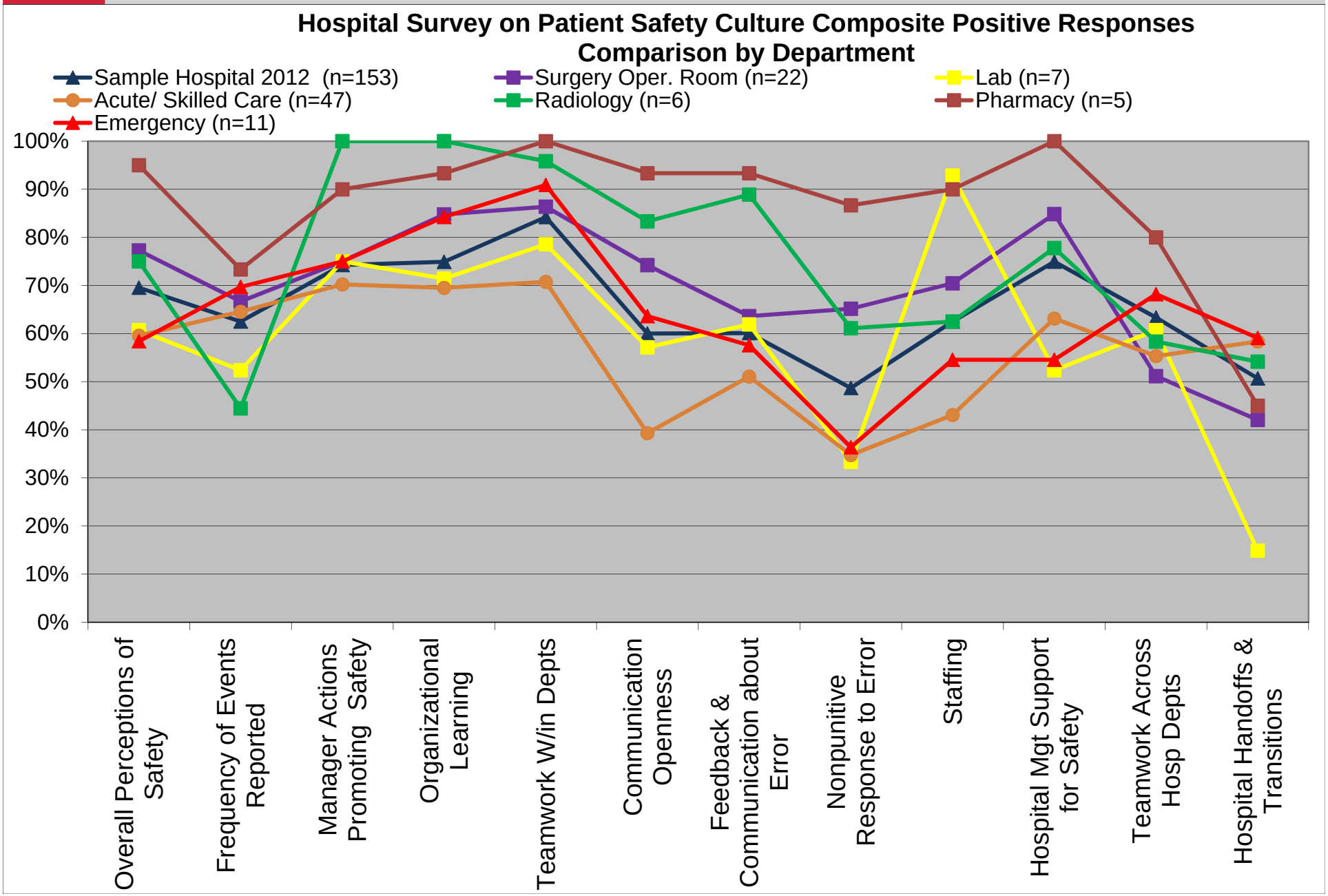
Identify areas in need of improvement: general recommendations

- 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



Internal Benchmarking Work Areas



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

Objectives 4 and 5.

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

Reason's Components[5]	HSOPS Dimension or Outcome Measure
Reporting Culture - a safe organization is dependent on the willingness of front-line 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

Reason's Components[5]	HSOPS Dimension or Outcome Measure
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)

2. When a lot of work needs to be done quickly, we work together as a team to get the work done. (A3)

3. In this department, people treat each other with respect. (A4)

4. When one area in this department gets really busy, others help out. (A11)

Teamwork Within Departments Composite Score = 77%

Teamwork within Departments 2012

1. People support one another in this department. (A1)

2. When a lot of work needs to be done quickly, we work together as a team to get the work done. (A3)

3. In this department, people treat each other with respect. (A4)

4. When one area in this department gets really busy, others help out. (A11)

18% GAP

Teamwork Within Departments Composite Score = 85%

Practices/skills that bridge the gap

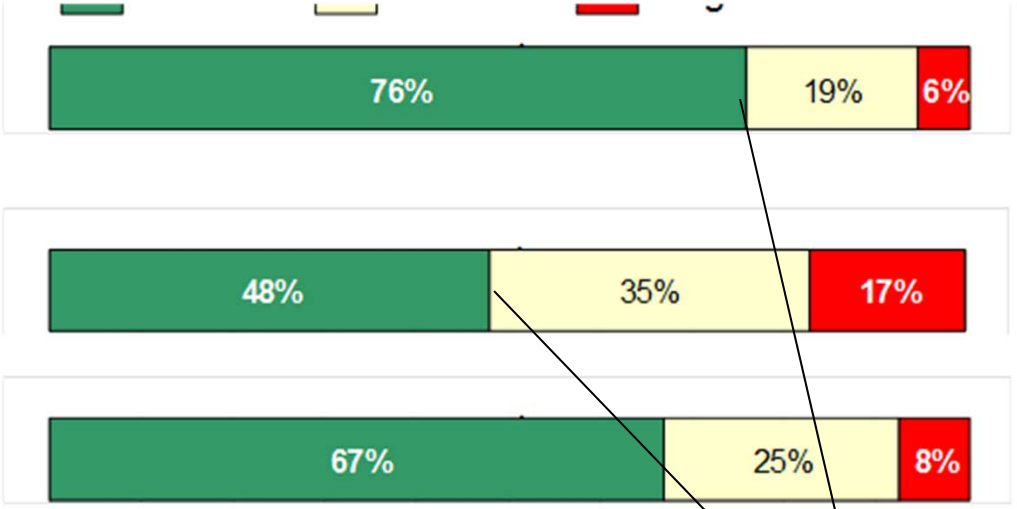
- Identify team leaders
  - ✓ Set team goals
  - ✓ Use briefs, huddles, debriefs
- Create shared mental model (Situation monitoring – mutual support)
  - ✓ Cross monitor (“watch each others’ back”)
  - ✓ Seek & offer task assistance

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)

R3. Staff are afraid to ask questions when something does not seem right. (C6)



Communication Openness Composite Score = 64%

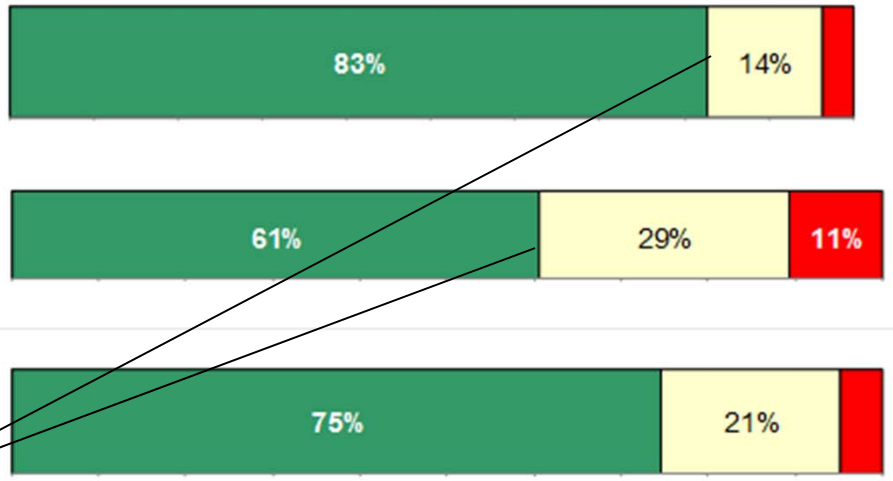
28% GAP

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%

22%
GAP

Practices/skills that bridge the gap

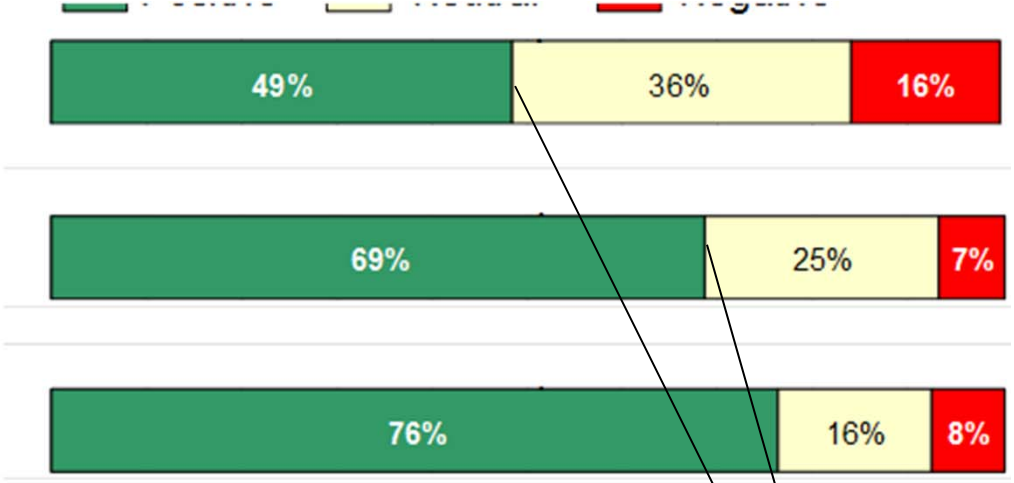
- Structured communication
  - ✓ SBAR, Call-Out, Check-back
  - ✓ Advocacy and assertion, 2 Challenge Rule, CUS
  - ✓ I PASS the BATON for structured handoffs

Feedback and Communication 2009

1. We are given feedback about changes put into place based on event reports. (C1)

2. We are informed about errors that happen in this department. (C3)

3. In this department, we discuss ways to prevent errors from happening again. (C5)



Feedback & Communication Composite Score = 64%

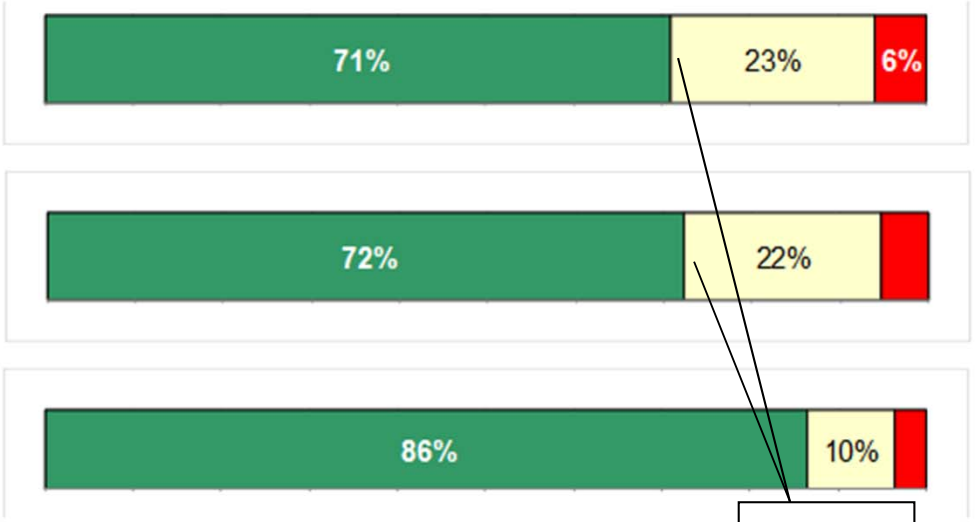
20% GAP

Feedback and Communication 2012

1. We are given feedback about changes put into place based on event reports. (C1)

2. We are informed about errors that happen in this department. (C3)

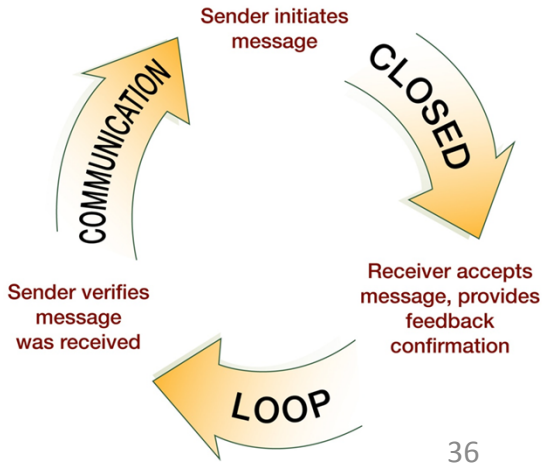
3. In this department, we discuss ways to prevent errors from happening again. (C5)



Feedback & 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



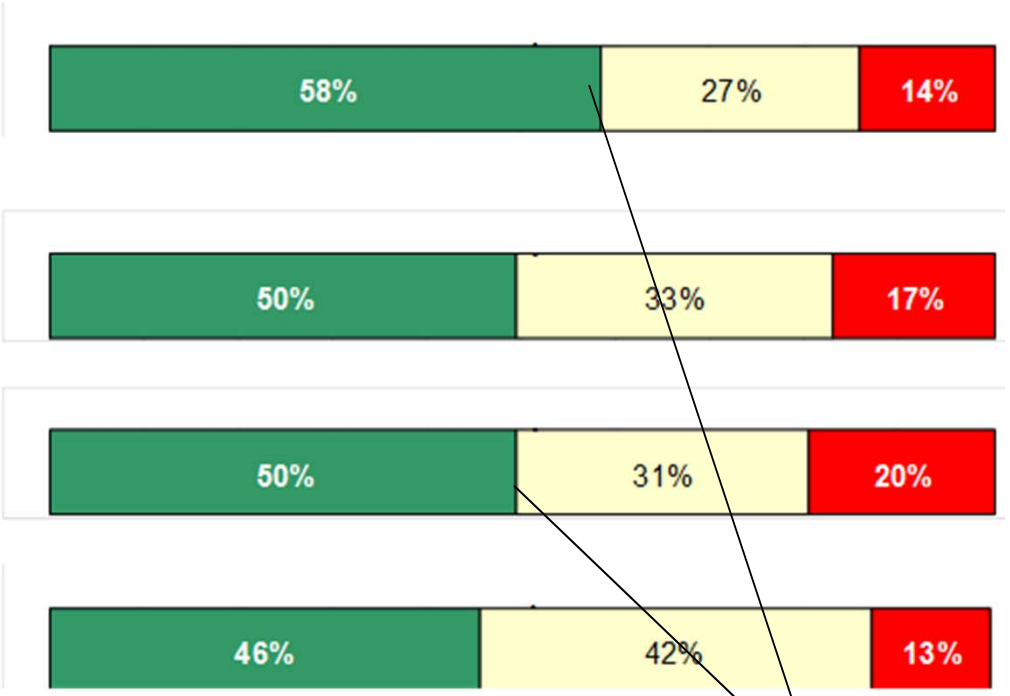
Handoffs & Transitions 2009

R1. Things "fall between the cracks" when transferring patients from one department to another. (F3)

R2. Important patient care information is often lost during shift changes. (F5)

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

R4. Shift changes are problematic for patients in this hospital. (F11)



Handoffs & Transitions Composite Score = 51%

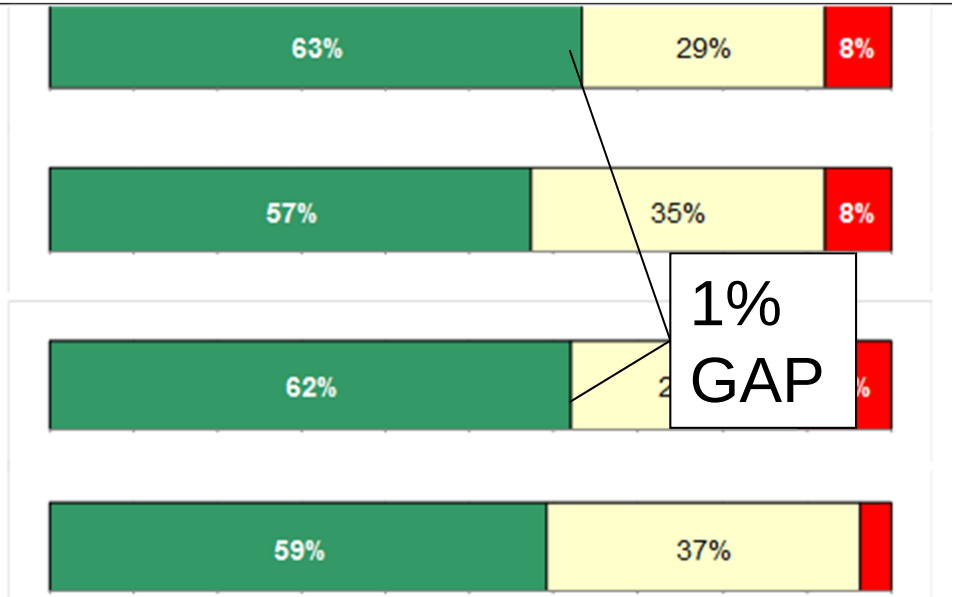
Handoffs & Transitions 2012

1. Things "fall between the cracks" when transferring patients from one department to another. (F3R)

2. Important patient care information is often lost during shift changes. (F5R)

3. Problems often occur in the exchange of information across hospital departments. (F7R)

4. Shift changes are problematic for patients in this hospital. (F11R)



Practices/skills that bridge the gap

Handoffs & Transitions Composite Score = 60%

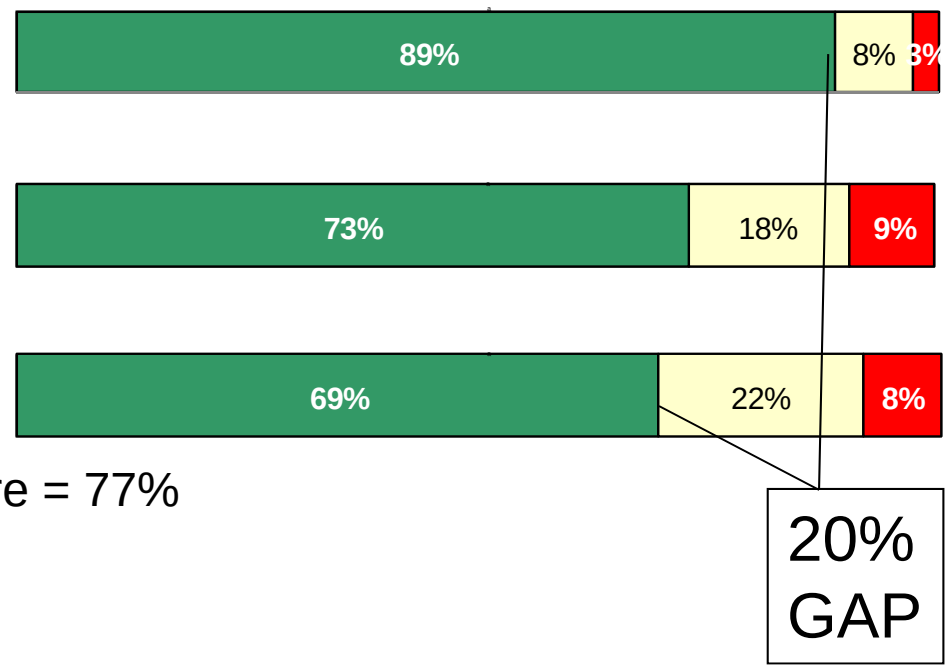
- Structured communication
  - ✓ SBAR, Check-back
  - ✓ Advocacy and assertion, 2 Challenge Rule, CUS
  - ✓ I PASS the BATON for structured handoffs
- Leadership Tools
  - ✓ Set team goals
  - ✓ Use briefs, huddles, debriefs

Organizational Learning 2009

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)



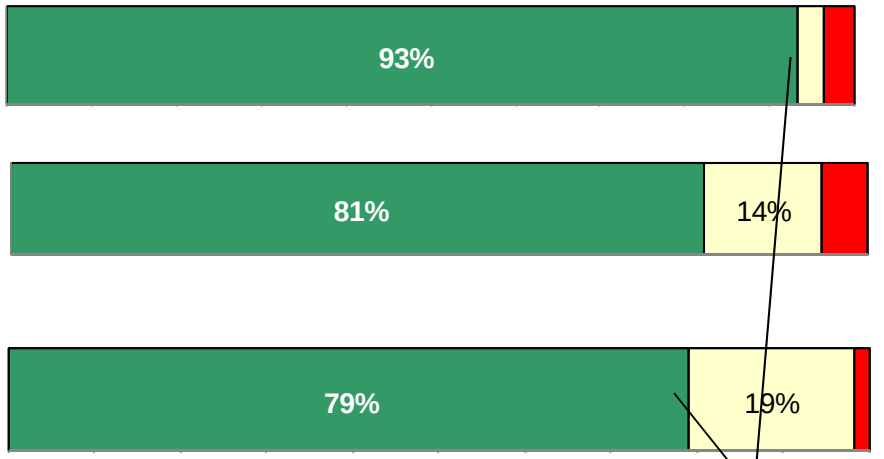
Organizational Learning Composite Score = 77%

Organizational Learning 2012

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 = 84%

Practices/skills that bridge the gap

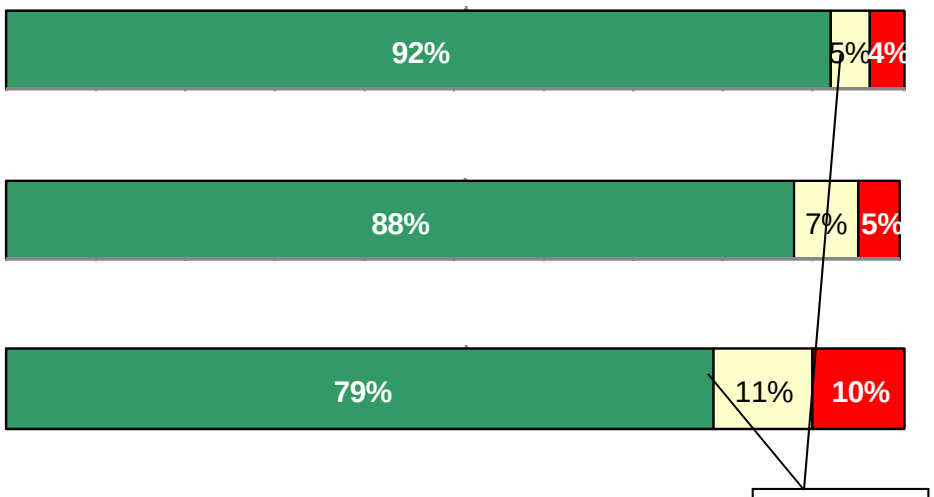
- Briefs, huddles, debriefs
- Safety Briefings
- Leadership WalkRounds, LFLE
- Tools used to understand system sources of error
  - ✓ Individual & aggregate root cause analysis
  - ✓ Failure mode & effect analysis

Hospital Mgt Support 2009

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%

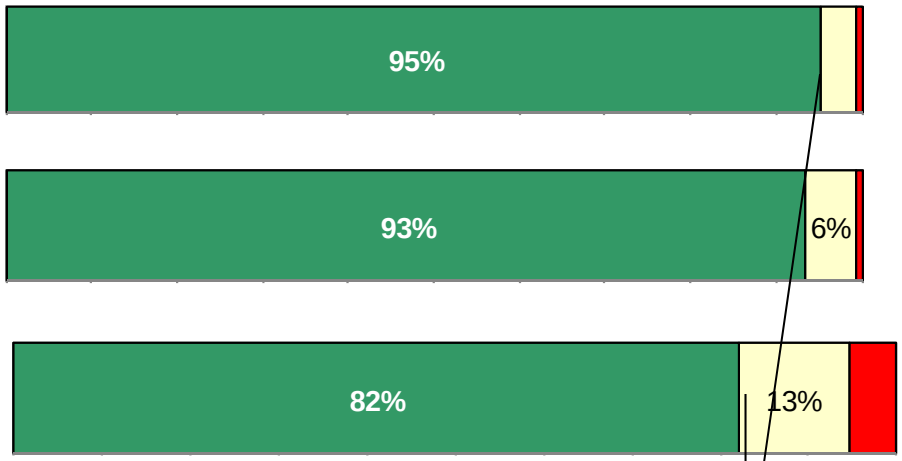
13% GAP

Hospital Mgt Support 2012

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[11]

- 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

Psychological Safety and Accountability[11]

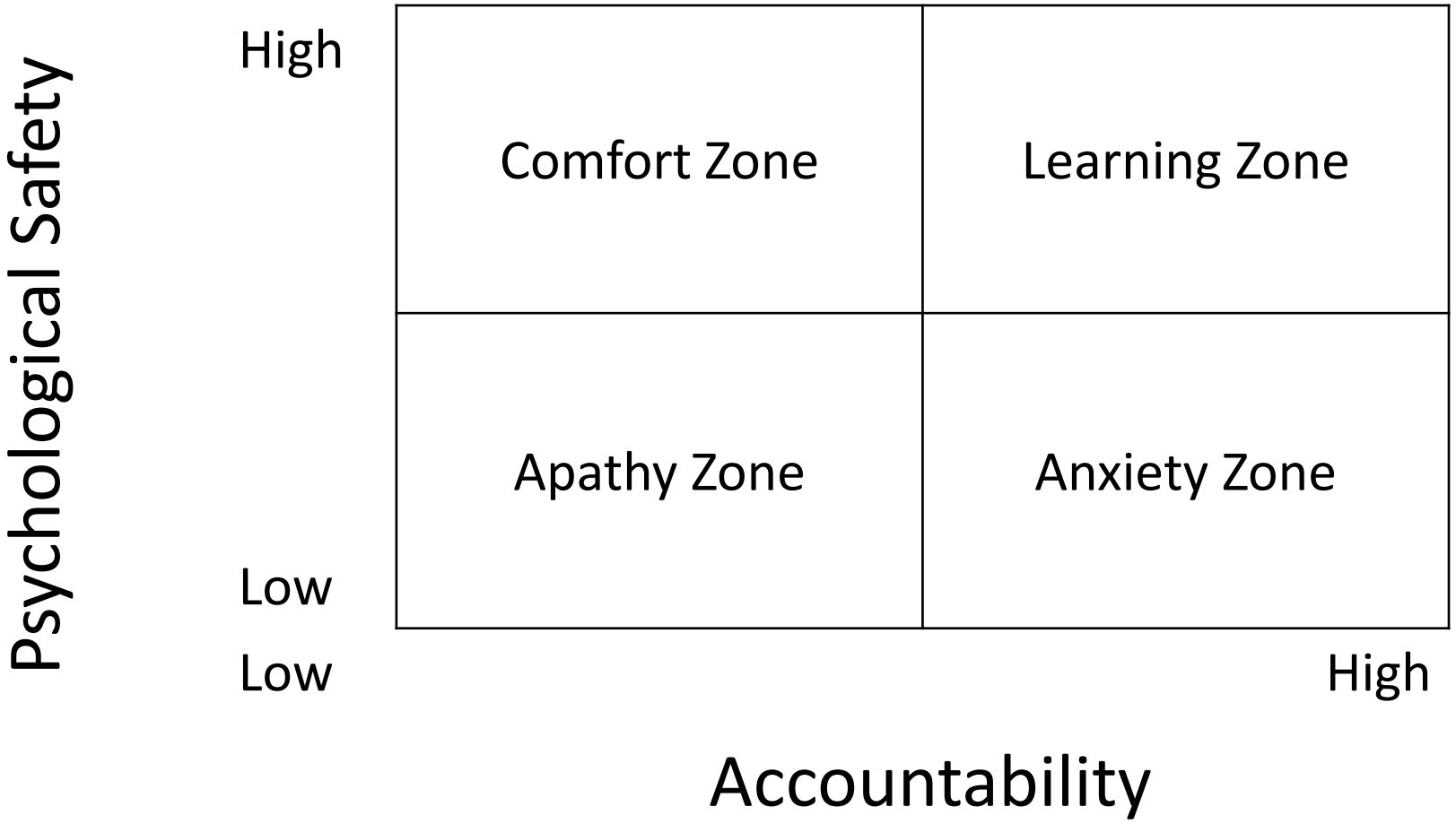
Interpersonal risks of speaking up: fear that you will be perceived as…

- 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[11]



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

Psychological Safety and Accountability[11]

Is it Safe to Learn?	HSOPS Dimension
Psychological Safety	Communication Openness Supervisor Manager Expectations & Actions Promoting Patient Safety (U)
Accountability	Supervisor Manager Expectations & Actions Promoting Patient Safety (U)
Learning	Organizational Learning—Continuous Improvement

HSOPS Reflects Psych Safety & Accountability

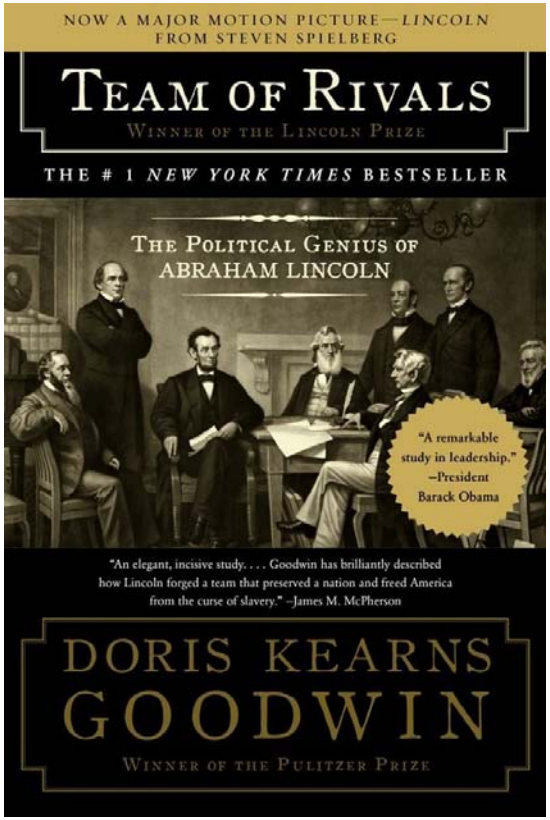
Is it Safe to Learn?	Apathy?	Anxiety?	Learning?
Supervisor Manager Expectations - Accountability			
B1. My supv/mgr says a good word when he/she sees a job done according to established patient safety procedures.	35%	86%	92%
B4R. My supv/mgr overlooks patient safety problems that happen over and over.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

Role of Leaders in Psychological Safety[11]

- 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[11]

"…most important influence on psychological safety is the nearest manager, supervisor, or boss."



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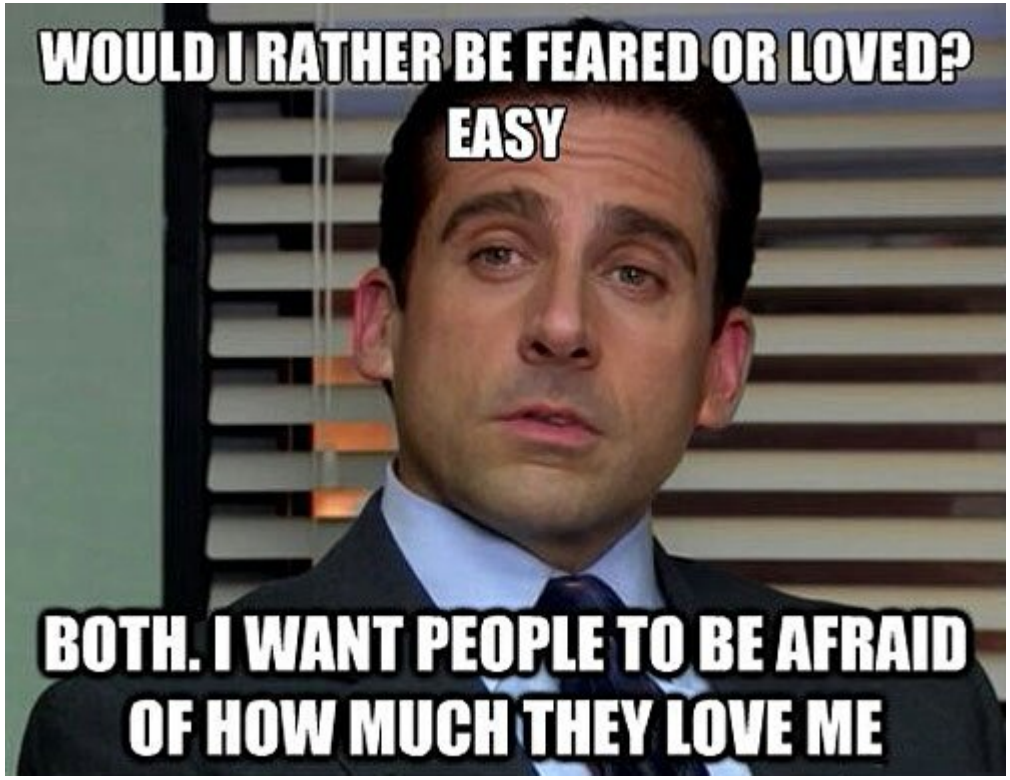

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Objective 5.

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

Reporting Interventions

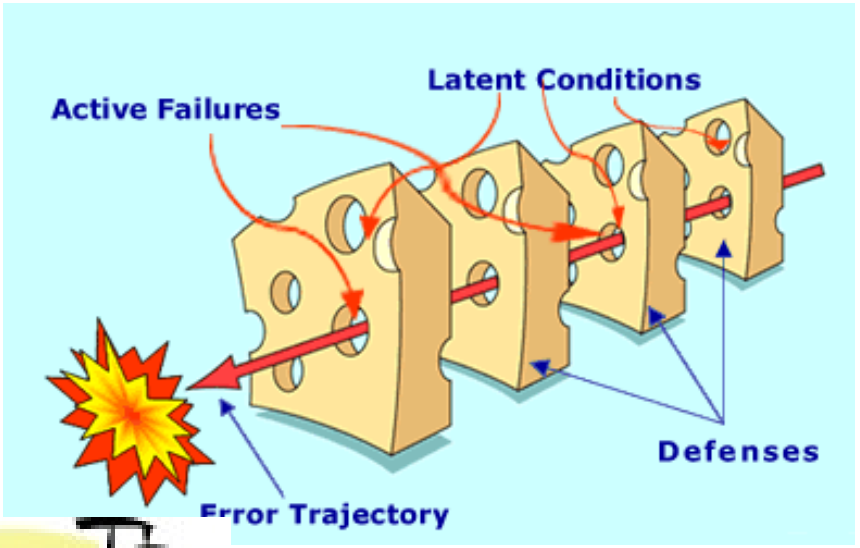
Successful Reporting Systems[12]

- 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 Briefings[13]
- Informal Reporting – Leadership WalkRounds, [14] Leveraging Frontline Expertise[15]

Just Culture Interventions

- Understand human fallibility
  - Nature of human error[5] (active vs latent error)
  - Human factors[16]



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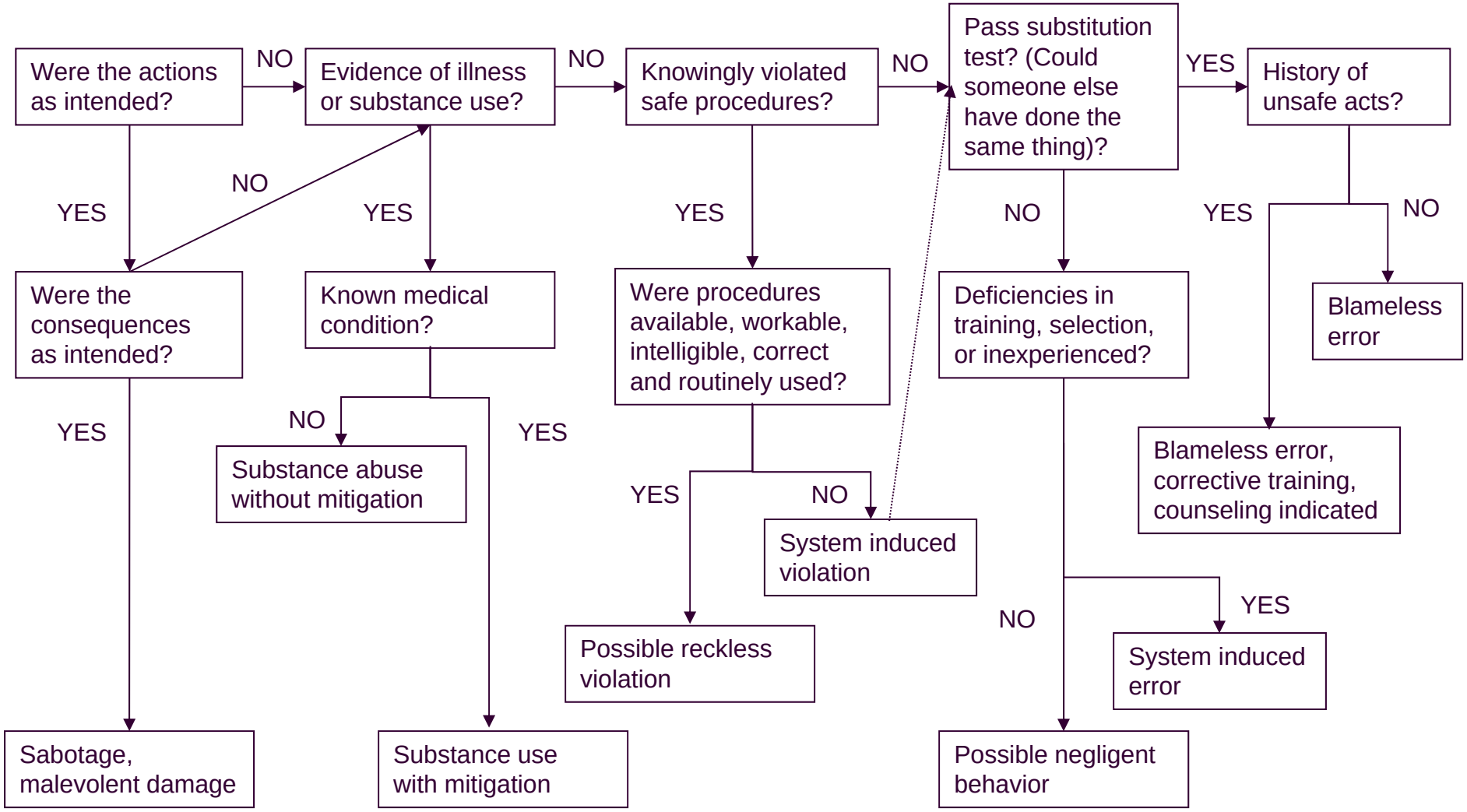
Just Culture Interventions

- Just Culture and behavior [17-19]
  - Conduct: human error, negligence, reckless, intentional rule violation
  - Algorithm-based disciplinary decision-making[5]
- Disruptive Behavior Policy/Standards[20]

Adapted from David Marx

Unsafe Acts Algorithm[5]

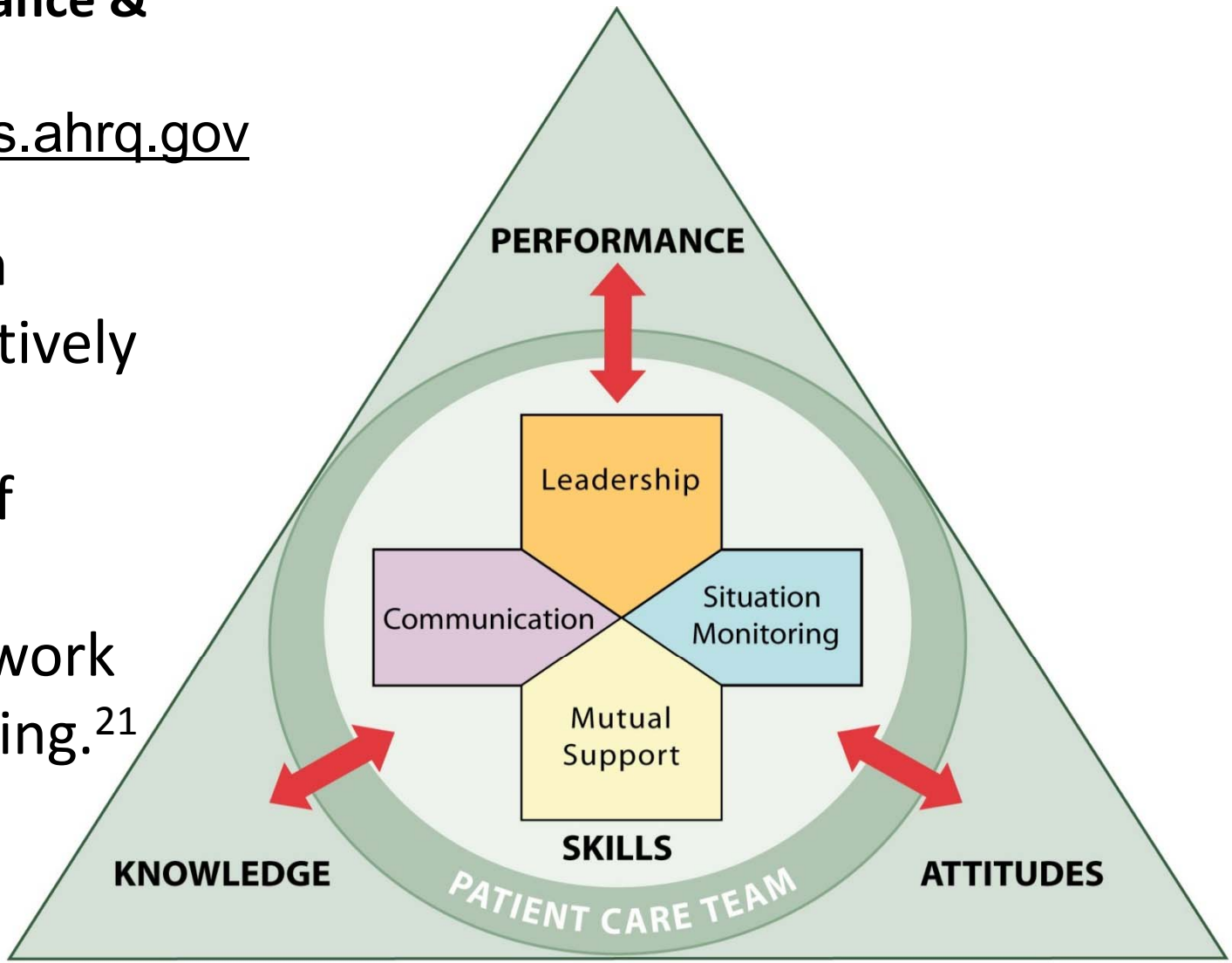


Adapted from James Reason. (1997). *Managing the Risks of Organizational Accidents.*

Teamwork Interventions

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[21]

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

Learning Interventions

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

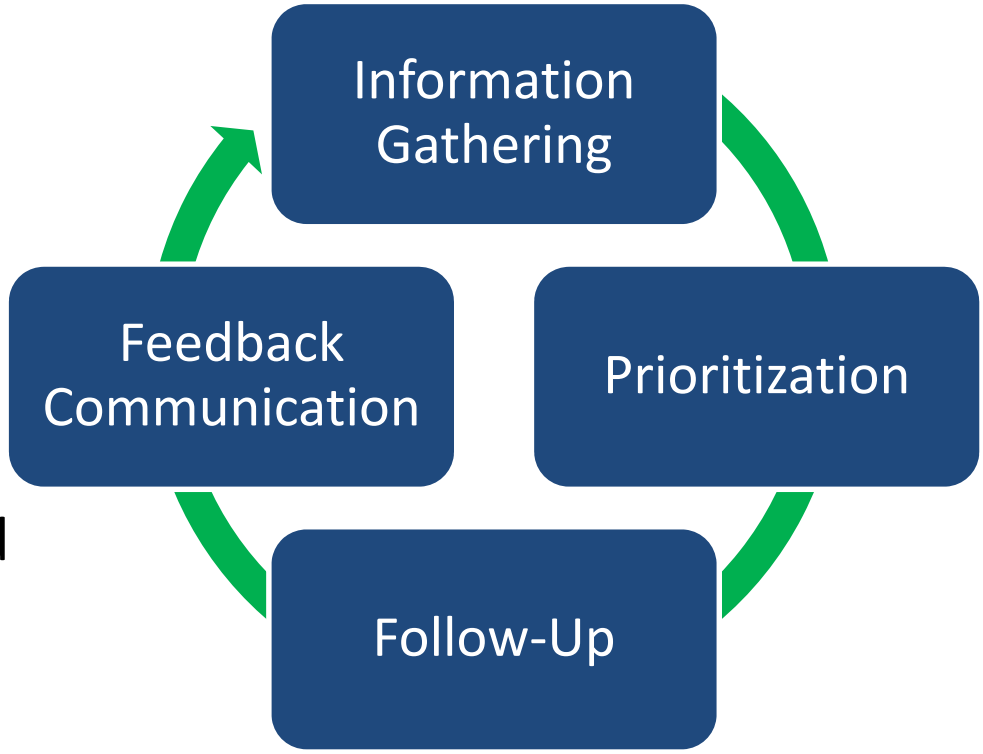
- Process Mapping[22,23]
- Individual RCA[24]
- Aggregate RCA25
- FMEA[26]
- Safety Briefings[13]
- Leadership WalkRounds,[14] Leveraging Frontline Expertise[15]
- Close the loop with reporting… provide feedback to frontline

Leveraging Frontline Expertise[15]

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



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

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