Institute of Health Policy, Management and Evaluation
UNIVERSITY OF TORONTO

Patient Safety Culture: Concept, Measurement and Practice

G. Ross Baker, Ph.D.
Jennifer Gutberg, MSc
University of Toronto
6 July 2021

WELCOME POLL:

Do you currently measure patient safety culture in your organization?

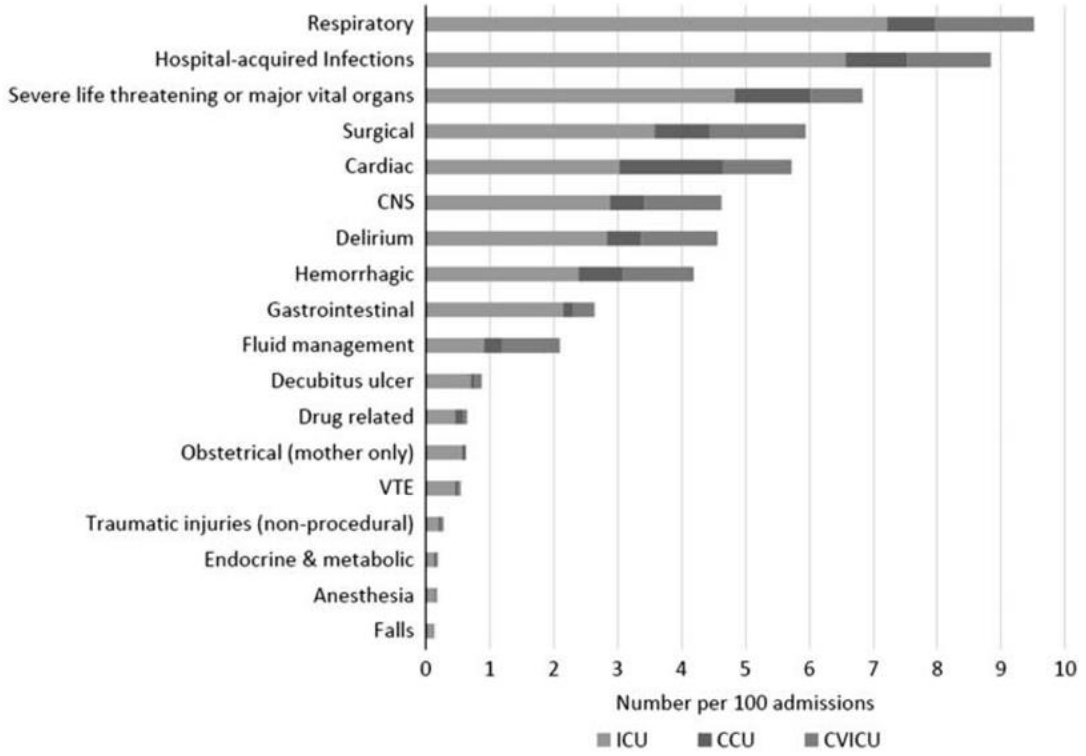
If so, what tool does your organization use?

What is Patient Safety Culture?

What is Gained from Measuring Culture?

Continuing Challenges of Patient Safety

- We are now thirty years since the initial chart review study of adverse events and more than 20 years since “To Err is Human” yet patient safety events remain a major source of morbidity and mortality
- To take one example, a recent review of adverse events between 2014 and 2017 in 30 ICUs in the province of Alberta, Canada using ICD-10 code algorithms for 18 types of events identified that 25% of admissions had 1 or more events



Sauro, Soo, Hude and Stelfox, Medical Care 2020

Why Is It So Hard to Improve Patient Safety?

- Over the last 20 years many interventions have been developed, tested and widely adopted
- But these have often had disappointing results

Shekelle, et al., The Top Patient Safety Strategies that Can be Encouraged for Adoption Now. Annals of Internal Medicine, 2013

Table 2. **Patient Safety Strategies Ready for Adoption Now**

Strongly encouraged

- Preoperative checklists and anesthesia checklists to prevent operative and postoperative events
- Bundles that include checklists to prevent central line–associated bloodstream infections
- Interventions to reduce urinary catheter use, including catheter reminders, stop orders, or nurse-initiated removal protocols
- Bundles that include head-of-bed elevation, sedation vacations, oral care with chlorhexidine, and subglottic suctioning endotracheal tubes to prevent ventilator-associated pneumonia
- Hand hygiene
- The do-not-use list for hazardous abbreviations
- Multicomponent interventions to reduce pressure ulcers
- Barrier precautions to prevent health care–associated infections
- Use of real-time ultrasonography for central line placement
- Interventions to improve prophylaxis for venous thromboembolisms

Encouraged

- Multicomponent interventions to reduce falls
- Use of clinical pharmacists to reduce adverse drug events
- Documentation of patient preferences for life-sustaining treatment
- Obtaining informed consent to improve patients' understanding of the potential risks of procedures
- Team training
- Medication reconciliation
- Practices to reduce radiation exposure from fluoroscopy and CT
- The use of surgical outcome measurements and report cards, such as those from ACS NSQIP
- Rapid-response systems
- Use of complementary methods for detecting adverse events or medical errors to monitor for patient safety problems
- Computerized provider order entry
- Use of simulation exercises in patient safety efforts

ACS = American College of Surgeons; CT = computed tomography; NSQIP = National Surgical Quality Improvement Program.

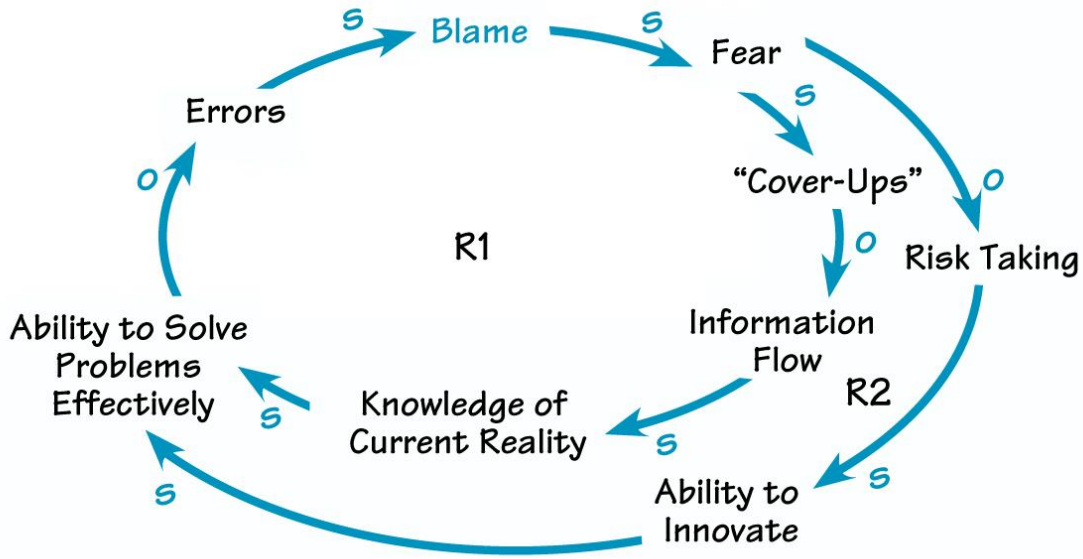
Patient Safety Culture

Patient safety culture refers to " the shared values, beliefs, norms, and procedures related to patient safety among members of an organization, unit, or team. It influences clinician and staff behaviors, attitudes, and cognitions on the job by providing cues about the relative priority of patient safety compared with other goals (for example, throughput or efficiency). Culture also shapes clinician and staff perceptions about "normal" behavior related to patient safety in their work area"

Weaver, et al., Promoting a Culture of Safety as a Patient Safety Strategy

Why is Patient Safety Culture Important?

"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"



Institute of Medicine, Crossing the Quality Chasm, 2001

Interventions Succeed in Supportive Environments

What is needed to ensure effective implementation of patient safety (and broader quality improvement interventions)?

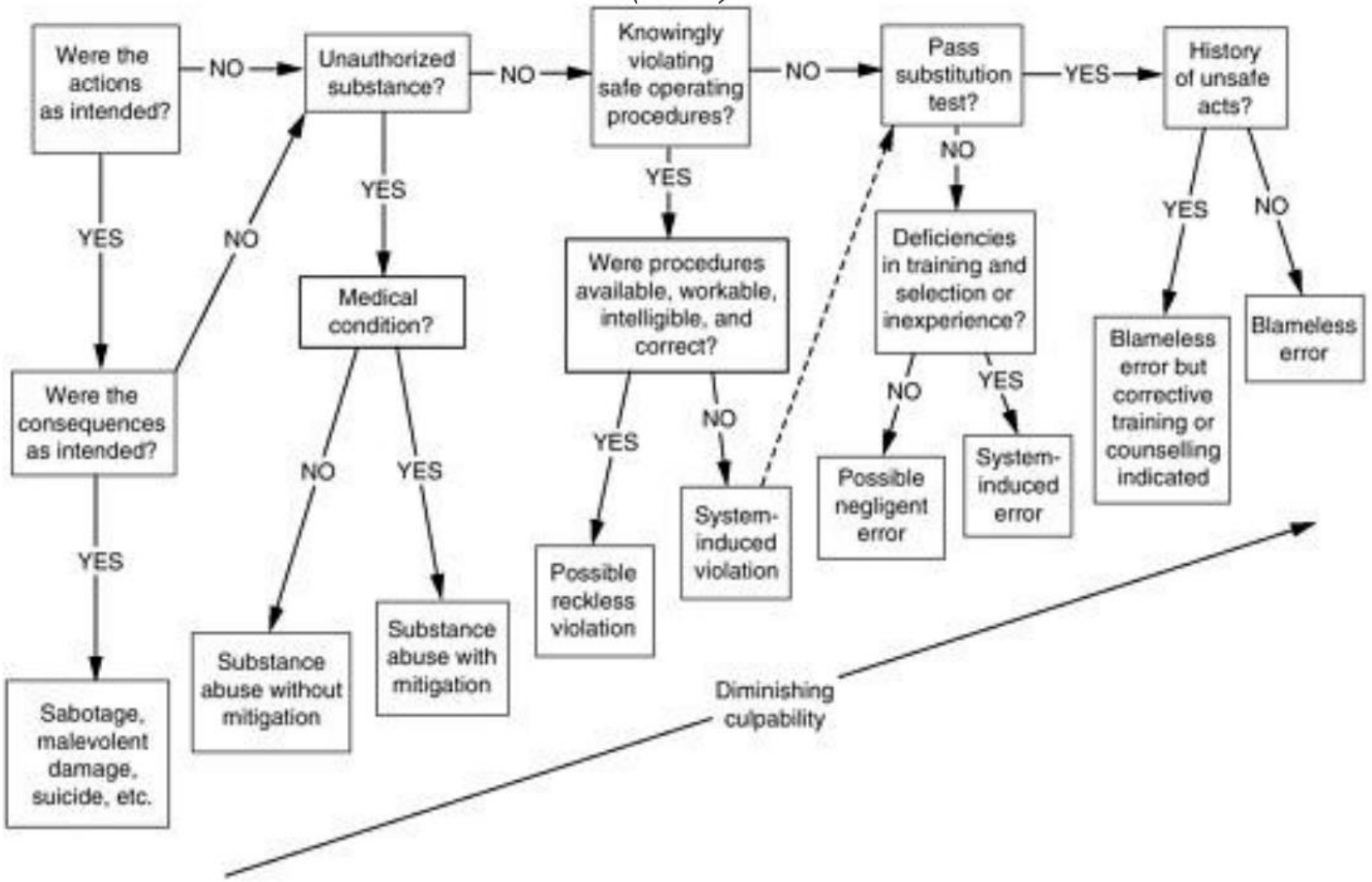
- Effective teamwork and communication skills
- Strong clinical leadership at the microsystem level
- Local data and accountability for performance
- Quality improvement capability
- Ongoing learning and reflection about performance
- Support from senior leadership

Just Culture

- Blaming individuals for errors that result from system deficiencies creates a toxic culture that disables organizational learning
- But many incidents result from both human error and poor system design
- How do we ensure that both individual culpability and system redesign can be addressed?

James Reason

Figure 3: James Reason's Decision Tree (1997)



Measuring Patient Safety Culture

- Many survey instruments available
- Among the most used:
  - Hospital Survey on Patient Safety Culture (HSOPS)
  - Safety Attitudes Questionnaire (SAQ)
  - Manchester Patient Safety Framework (MaPSaF)

Measurement Alone Does Not Improve Culture

- There is a growing industry of measuring patient safety culture –and survey results are useful ways to understand employee/staff attitudes and behaviours
- But the results by themselves are challenging to translate to effective action to improve culture
- Without guidance patient safety culture surveys are like “describing the water to a drowning man: they tell you how bad things are but do little to help in solving the problem” (Fleming, 2013)

SYSTEMATIC REVIEW

Strategies for improving patient safety culture in hospitals: a systematic review

Renata Teresa Morello,[1] Judy A Lowthian,[1] Anna Lucia Barker,[1] Rosemary McGinnes,[1] David Dunt,[2] Caroline Brand[1]

▸ Additional data are published online only. To view these files please visit the journal online (http://dx.doi.org/10.1136/bmjqs-2011-00582).

[1]Centre of Research Excellence in Patient Safety, Department of Epidemiology and Preventive Medicine, Monash University, Victoria, Australia
[2]Centre for Health Policy, Programs and Economics, Melbourne School of Population Health, University of Melbourne, Victoria, Australia

Correspondence to
Renata Teresa Morello, Centre of Research Excellence in Patient Safety (CRE-PS), School of Public Health and Preventive Medicine, Department of Epidemiology and Preventive Medicine, Monash University, The Alfred Centre, 99 Commercial Road, Melbourne, VIC 3004, Australia;
renata.morello@monash.edu

Received 16 October 2011
Revised 3 July 2012
Accepted 4 July 2012
Published Online First
31 July 2012

▸ http://dx.doi.org/10.1136/bmjqs-2011-000446
▸ http://dx.doi.org/10.1136/bmjqs-2012-001572

ABSTRACT

Purpose To determine the effectiveness of patient safety culture strategies to improve hospital patient safety climate.

Data sources Electronic search of the Cochrane Library, OVID Medline, Embase, CINAHL, proQuest and psychinfo databases, with manual searches of quality and safety websites, bibliographies of included articles and key journals.

Study selection English language studies published between January 1996 and April 2011 that measured the effectiveness of patient safety culture strategies using a quantitative measure of patient safety climate in a hospital setting. Studies included were randomised controlled trials (RCTs), non-RCTs, controlled before and after studies, interrupted time series and historically controlled studies.

Data extraction Data extraction and critical appraisal were conducted by two independent reviewers. Study design, intervention, level of application, setting, study participants, safety climate outcome measures and implementation lessons were extracted from each article.

Results of data synthesis Over 2000 articles were screened, with 21 studies meeting the inclusion criteria, one cluster RCT, seven controlled before and after studies, and 13 historically controlled studies. There was marked methodological heterogeneity amongst studies. Impacts of 11 different strategies were reported. There was some evidence to support that leadership walk rounds ($p=0.02$) and multi-faceted unit-based programmes ($p < 0.05$) may have a positive impact on patient safety climate.

Conclusions Despite strong face validity for a variety of patient safety culture strategies, there is limited evidence to support definitive impacts on patient safety climate outcomes. Organisations

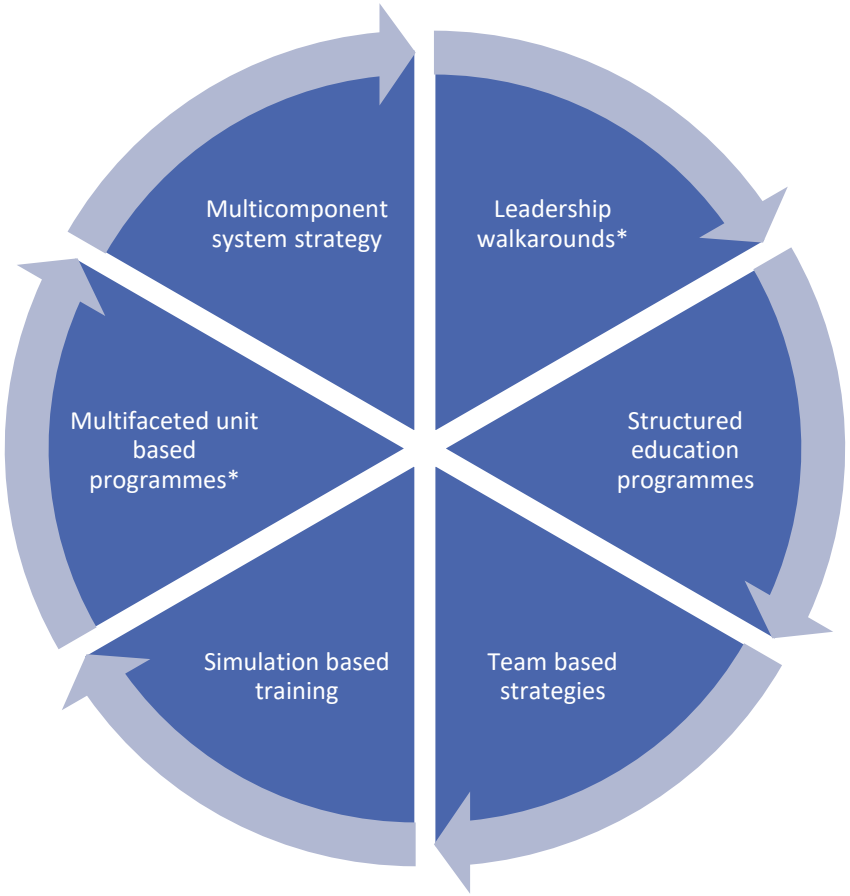
INTRODUCTION

There is a current focus on measuring and improving patient safety culture to enhance patient safety in hospitals.[1] This is reflected in the increasing number of literature reports on patient safety culture performance.[2–13] Patient safety culture is encouraged at jurisdictional and organisational levels by national health policy makers, with hospitals routinely administering surveys in many countries.[14–16] Patient safety culture (figure 1), a component of organisational culture, includes the shared beliefs, attitudes, values, norms and behavioural characteristics of employees[17] and influences staff member attitudes and behaviours in relation to their organisation's ongoing patient safety performance.[18–21]

Accurate measurement of patient safety culture is limited by the ability to define measureable components of culture.[22] Therefore the demand for relatively low-cost, quick and easy to use assessments of patient safety culture has resulted in a reliance on patient safety climate questionnaires.[6 23–28] Patient safety climate (figure 1) describes employee perceptions and attitudes about the surface features of patient safety culture at a given point in time.[29] A number of patient safety climate questionnaires have been developed[29 30] and used within healthcare organisations to measure performance for benchmarking, diagnosis and planning of internal quality improvement. More recently they have been used to examine the effectiveness of strategies designed to improve patient safety culture.

Positive patient safety climate has been reported to be associated with enhanced

Key Strategies for Improving Patient Safety Culture



Patient Safety Culture Improvement Tool

Example element

Patient Safety Leadership

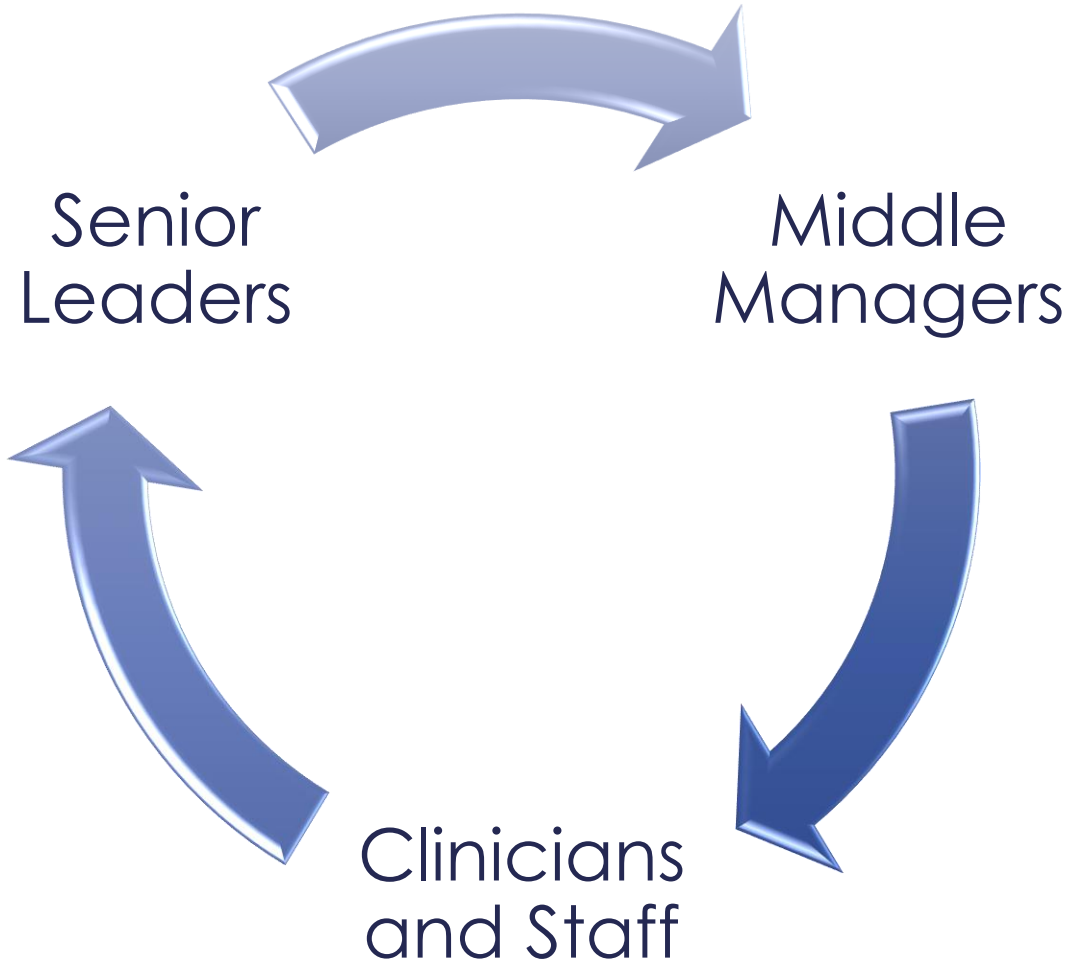
		Select Level		
Maturity Level	**Patient Safety Leader Education and Training**	**Senior Managers**	**Physician Leaders**	
0	No patient safety education/training is provided to leaders.			
1	General information on patient safety, including how it is measured, policies and procedures, is provided to leaders.			
2	Leaders receive information about their role in improving patient safety. They receive nonrecurring knowledge-based training about leadership behaviours that promote patient safety.			
3	Leaders are taught interpersonal competencies (through skill-based training) to motivate colleagues and subordinates to improve patient safety. Training is recurrent (at least annual) and includes target setting to improve interpersonal skills.			
4	Leaders receive mandatory individualized patient safety leadership development based on upward appraisal and evaluation. There is a formal ongoing evaluation of senior managers' behavioural change.			

Fleming and Wentzell. Patient Safety Culture Improvement Tool, Healthcare Quarterly 2008

Role of Leaders Across the Organization in Measuring Patient Safety Culture

Culture change is **Complex**.

Planned input (**safety strategy**) rarely leads to expected output (**frontline safety culture**)


Senior Leaders
Middle Managers
Clinicians and Staff

Senior leaders enable safety climate and culture, build capacity for change, and create a platform for measurement.

Patient Safety Culture "Bundle" for CEO's/Senior Leaders

PATIENT SAFETY FORWARD WITH

1. Enabling

Organizational priority setting, leadership practices that motivate the pursuit of safety

Organizational priority

- ☐ Board educated, engaged, accountable, prioritizes patient safety?
- ☐ Safety/quality vision, strategy, plan, goals (with input from patients, families, staff, physicians)?
- ☐ Safety/quality resources/infrastructure?

CEO/senior leadership behaviours

- ☐ Relentless communication about safety/quality vision, stories, results?
- ☐ Regular/daily interaction with care settings/units, staff, physicians, patients and families?
- ☐ Model key values (e.g. honesty, fairness, transparency, openness, learning, respect, humanity, inclusiveness, person-centredness)?

Human resources

- ☐ Leaders/staff/physicians engaged, clear expectations/incentives for safety/quality?
- ☐ "Just culture" program/protocol?
- ☐ Disruptive behaviour protocol?
- ☐ Staff and physician safety (physical/psychological/burnout); safe environment program?

Health information/technology/devices

- ☐ E-health records support safety (e.g. decision support, alerts, monitoring)?
- ☐ Technology/devices support safety (e.g. human factors, traceability)?

Healthcare system alignment

- ☐ Community/industry-wide collaborations?
- ☐ Align with national/international standards (e.g. accreditation, regulatory, professional, industry)?

2. Enacting

Frontline actions that improve patient safety

Care settings and managers

- ☐ Integrated, unit/setting-based safety practices (e.g. daily briefings, visual management, local problem solving)?
- ☐ Managers/physician leaders foster psychological safety (speaking up)?

Care processes

- ☐ Standardized work/care processes where appropriate?
- ☐ Communication/patient hand-off protocols (e.g. between shifts/units, across care continuum)?

Patient and family engagement/co-production of care

- ☐ Patients/families partners in all aspects of care (e.g. planning, decision-making, family presence policy, rounds, access to health record/test results)?
- ☐ Patients/families involved in local safety/quality initiatives?
- ☐ Disclosure and apology protocols?

Situational awareness/resilience

- ☐ Processes for real-time/early detection of safety risks and patient deterioration (by staff/patients families/physicians)?
- ☐ Protocols for escalation of care concerns (by staff/patients/families/physicians)?

3. Learning

Learning practices that reinforce safe behaviours

Education/capability building

- ☐ Leaders/staff/physicians trained in safety and improvement science, teamwork, communication?
- ☐ Team-based training, drills?

Incident reporting/management/analysis

- ☐ Effective risk/incident reporting system for events related to patients/families and staff/physicians (e.g. near misses, never events, mortality/morbidity reviews)?
- ☐ Structured processes for responding to and learning from safety events/critical incidents (e.g. systems analysis, patient/family/staff/physician involvement and support)?

Safety/quality measurement/reporting

- ☐ Regular measurement of safety culture; patient/family complaints; and staff/physician engagement (by unit/setting and organization)?
- ☐ Retrospective/prospective safety and quality process and outcome measures?
- ☐ Regular, transparent reporting of safety/quality plan results?

Operational improvements

- ☐ Structured methods, infrastructure to improve reliability, streamline operations (e.g. PDSA, lean, human factors engineering, prospective risk analysis)?

cpsi icsp Canadian Patient Safety Institute / Institut canadien pour la sécurité des patients

CANADIAN COLLEGE OF HEALTH LEADERS / COLLÈGE CANADIEN DES LEADERS EN SANTÉ

HealthCareCAN *Leading. Innovation. Together.* SoinsSantéCAN *Leadership. Innovation. Collaboration.*

HIROC

Adapted from: Singer & Vogus (2013). Reducing hospital errors: Interventions that build safety culture. *ARPH 34:373-96* JANUARY 2018

Middle managers uniquely positioned to **implement** measurement tools & strategies, guiding, adapting, and communicating to frontline staff.

Physicians, nurses, and other clinicians and care providers **action** results from measurements and **tailor** to their existing environment.

Patient Safety Culture Tools and Surveys

Checklist for Assessing Institutional Resilience
Culture of Safety Survey
Danish Patient Safety Culture Questionnaire
Error Orientation Questionnaire – Hospital Culture Questionnaire
Hospital Survey on Patient Safety
Hospital Survey on Patient Safety Culture
Manchester Patient Safety Assessment Framework
Nursing Unit Cultural Assessment Instrument
Patient Safety Climate in Aesthesia
Patient Safety Culture Questionnaire
Patient Safety Culture in Healthcare Organisations Survey
Safety Attitudes Questionnaire
Safety Climate Assessment Tool
Safety Climate Scale – Safety Climate Survey
Stanford Safety Culture Instrument
Teamwork and Patient Safety Attitudes Questionnaire
Trainee Supplemental Survey
TUKU – Safety Culture in Health Care Survey
Veteran Affairs Palo Alto / Stanford Patient Safety Center for Inquiry
Veterans Health Administration Patient Safety Culture Questionnaire
Vienna Safety Culture Questionnaire
World Alliance for Patient Safety Hand Hygiene Campaigns Healthcare - Units Survey on Patient Safety Culture.

Source: The Health Foundation. Evidence Scan: Measuring safety culture; 2011.

Hospital Survey on Patient Safety Culture [HSOPS 2.0]

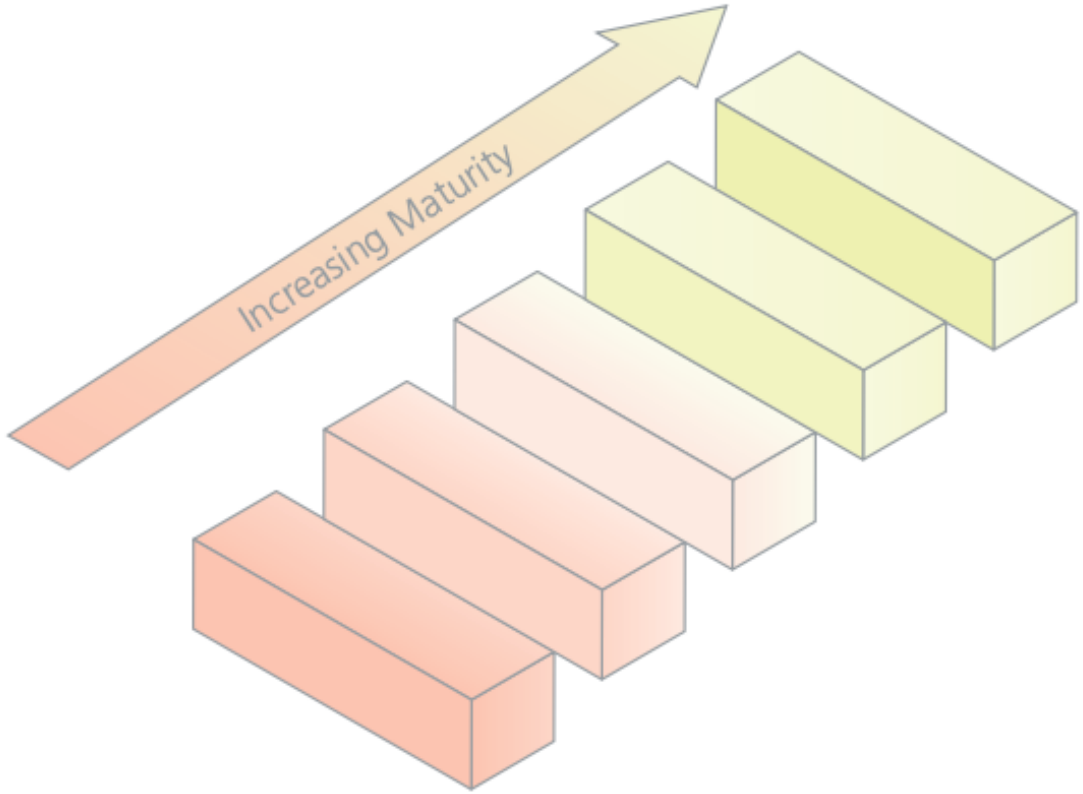
Safety Attitudes Questionnaires (SAQ)

- Teamwork climate
- Job satisfaction
- Perceptions of management
- Safety climate
- Working conditions
- Stress recognition

Manchester Patient Safety Framework (MaPSaF)

- **Westrum's (1993) theory of organisational safety:** pathological, bureaucratic and generative
- Reactive, proactive

Emphasis on Maturity and Growth



MaPSaF is based on Parker and Hudson's (2001) application of Westrum's (1992) stage model of organisational culture maturity

References

Parker, D and Hudson, P (2001) *Understanding your culture*, Shell International Exploration and Production.

Westrum, R (1992) *Cultures with Requisite Imagination* in Wise, J, Hopkin, D and Stager, P (eds.), *Verification and validation of complex systems: human factors issues* (pp 401–416), Berlin: Springer-Verlag.

MaPSaF Dimensions

1. Commitment to overall continuous improvement
2. Priority given to safety
3. System errors and individual responsibility
4. Recording incidents and best practice
5. Evaluating incidents and best practice
6. Learning and effecting change
7. Communication about safety issues
8. Personnel management and safety issues
9. Staff education and training
10. Team working

POLL

What trends have you seen in your organizations, based on the results of PSC surveys?

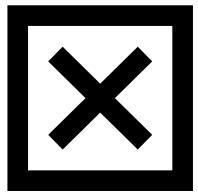
Integrating PSC into a Safety Program – Now What?

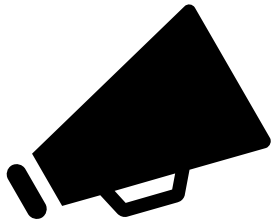
Reinforcing the Cycle of Safety Culture

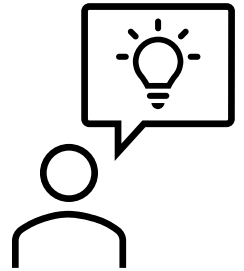
When leaders **effectively** measure and use PSC, they should adopt the principles of **mindfulness** and **high reliability** organizing.

This creates meaning and psychological ownership for frontline workers, which then allows them to initiate their own safety improvements (Curcuruto, Parker, Griffin, 2019).

Through this, PSC measurement becomes both a "top-down" and "bottom-up" endeavour, reinforcing the culture of patient safety.







Reliability and Mindfulness in Safety Culture

Pre-occupation with Failure

What could we be missing?

It’s not enough to be content with the absence of errors.

Reluctance to Simplify

What assumptions are we making?

Think about team, processes, etc.

Sensitivity to Operations

What is going on around me?

Situational awareness

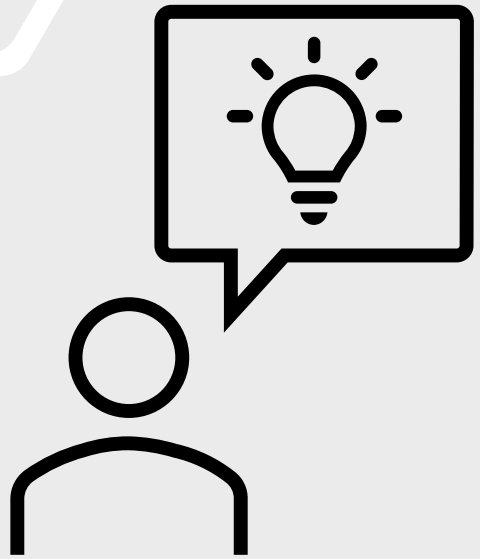
Deference to Expertise

Who is the expert?

Who has the relevant knowledge and **are they able to share it openly?**

Commitment to Resilience

Do we need to discuss what went well/went wrong? How can we avoid the same mistake?



Key Takeaways

- Aim: Making PSC measurement and survey tool use a core activity in improving care, not a checkbox to mark.
- Challenge: Safety practices are at risk of being parked “to the side”, seen as an administrative burden.
- How to achieve success: Extending our view of safety and embedding safety enhancing activities into organizational, clinical, and managerial practices continuously.

POLL

Going forward, what are your key needs or remaining challenges around patient safety culture?