White Paper

CLARITY PSO
A Patient Safety Organization

Journey to an Effective Safety Culture

Part II of III Exploring the Role of Culture in Safety Outcomes

Awareness & Assessment of Safety Culture

Introduction

The first white paper in the *Journey to an Effective Safety Culture* series presented an overview of safety culture by providing definitions, historical perspectives and AHRQ's view on the current status of safety culture. In Part II, we explore complexity and chaos' effects on systems, human factors, Just Culture, and the potential impacts they all have on patient safety; various theories are reviewed, safety program frameworks are introduced and safety culture assessment tools are presented.

Theories Related to Safety Culture

Central to the journey is an understanding of the theories that make up the entire process of safety culture development. Effective knowledge and use of these principles will facilitate the understanding of their overall effects on patient safety and ultimately help lead to successful outcomes at your organization. The following theories have strong ties to patient safety and should be considered in your journey toward a positive culture of safety:

>> Systems Thinking

Merriam Webster (2014) defines a system as a regularly interacting or interdependent group of items forming a unified whole. Systems are dynamic in nature and repeated interactions result in collective behaviors that, in turn, impact the individual behaviors of its components. Systems may vary from simple to complex, but healthcare systems are typically complex in nature and include elements of chaos and human factors. For the most part, complex systems can handle the loss or ineffectiveness of one component by adapting or compensating for its absence. Critical or multiple components going awry, however, have the potential to severely affect the whole system.

A microsystem is a subset of a system that exists on its own but is also a part of and affects the whole. An example might be an orthopedic unit within a hospital. An orthopedic unit functions with its own set of characteristics, but it is still an integral part of the entire hospital and is interdependent on the other units. One of the characteristics that is specific to each unit is its culture. The microsystem culture is very important and should not be underestimated as it has a great effect on the organization as a whole.

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>> Complexity and Chaos

Complexity theory states that the adaptive order of a given system exists within the chaotic disorder that is ever-present in the world. According to Porter-O'Grady & Malloch (2011), the complexity theory tells us that everything is related to some degree through a web of interactive relationships, ultimately affecting the system it resides in. Together these relationships intersect on a broader level to reach the goals and outcomes of an organization's vision. Central to this is the delicate balance of both vertical (control) and horizontal (relatedness) thinking by leaders to advance the strategic plan and purpose throughout an organizational system.

Chaos occurs when change, even small ones, interact to have large implications on a system and reflect the constant struggle between the settling and shifting of a system. Familiar to many is the concept of the "butterfly effect," which is when a small change in one part of the world can lead to potentially large consequences in another part of the world. That being said, chaos should not necessarily be avoided or perceived as negative because its presence can stimulate creativity and bring about positive change. For example, a new initiative might create some disruption that, in turn, sheds light on another much needed process improvement previously unseen.

The awareness that complexity and chaos exist within a system allows providers to not only prepare for the inevitable, but also to embrace the opportunities that can result from them. By assessing organizations down to the local, microsystem level (including culture), discoveries can be made, innovation can occur, and successful implementation of patient safety initiatives can happen leading to desired outcomes. Embracing the two is simply good practice. The ability to adapt and change within a complex system to constant states of chaos is paramount.

>> Human Factors

Human factors theory highlights the relationship between systems, both design and process, and human behaviors that impact safety. An awareness of the role human factors play in error causation allows for better understanding of how factors within a system interplay with the people who use them while taking into consideration that human beings inevitably make mistakes. Being able to work through identified human aspects of behavior facilitates changes in environment design and work processes within health care systems.

Human Factors
The World Health Organization (WHO) (2014) defines human factors as: *"Human factors refer to environmental, organizational and job factors, and human and individual characteristics which influence behavior at work in a way which can affect health and safety. A simple way to view human factors is to think about three aspects: the job, the individual and the organization and how they impact people's health and safety-related behavior."*   *(Health and Safety Executive, United Kingdom)*

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Historically, errors have been attributed to the individual at the "sharp end" of patient care, namely those at the point of care. Strategies were aimed at the person while consequences focused on correcting individual behavior or worse, disciplinary actions resulting in termination. James Reason's (1990) Theory of Accident Causation, or "Swiss Cheese Model" of system failure, has become a familiar model in understanding error, both active and latent. As the potential for error within each step of the process makes its way through "holes" in the cheese, built-in defenses attempt to deflect them at different points in the process. Error occurs when opportunities proceed forward without any defense mechanisms in place and, in the case of healthcare, an error reaches the patient.

Today, a systems approach to error may be taken, which focuses on system failure and latent issues. Strategies for improvement should focus on processes and countermeasures to mitigate human factor aspects that may be involved. To learn more about human factors and error, the Department of Community and Family Medicine at Duke University Medical Center provides a module entitled, *Anatomy of an Error*. The site also provides other modules for patient safety-quality improvement.

>> *Just Culture*

Current thought has moved from punitive blame of an individual for errors to one that considers systems thinking and human factors. The majority of errors are typically unintentional. Providers who make accidental errors most often tend to be intrinsically hardest on themselves, so reprimanding these individuals only fans the flame. Understanding and learning from errors is what will drive improvements. Those organizations whose disciplinary systems focus on individual blame, however, will find that errors are usually hidden making it hard to drive improvements.

Psychologically safe environments supportive of reporting allows providers to identify system failures as well as recognize and understand human components that may have been involved. An entirely "no blame" environment, though, is unrealistic. Individual accountability must be held when an error event involves conscious, blatant disregard for policy and risk, or is simply gross misconduct. A Just Culture takes into account system failures that contribute to error over which an individual may have had no control as well as human factors that naturally interact within systems.

David Marx's (2001) article on patient safety and Just Culture discusses what the author calls the "four evils" or behavioral concepts needed to understand the relationship between discipline and patient safety as listed below. Most resources regarding Just Culture involve the first three with intentional rule violation falling into the third category.
1. Human error (mistakes, slips, lapses)
2. Negligent conduct (failure to exercise the skill, care and learning expected of a reasonably prudent healthcare provider; behavior justification or failure to recognize a risk)
3. Reckless conduct (a higher degree of negligence which involves conscious disregard of a risk)
4. Intentional rule violation (to knowingly violate a rule while performing a task)

For more information on understanding Just Culture, the AHRQ website provides a video from the Comprehensive Unit-based Safety Program (CUSP) toolkit entitled, *Understand Just Culture.*

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>>Patient Safety Model of Healthcare

In 2008, AHRQ released a publication that looks at new directions and alternative approaches related to advances in patient safety (Emanuel, 2008). The authors, including Linda Emanuel, Donald Berwick, James Reason, and Lucian Leape, felt that a single framework of patient safety for healthcare was lacking and attempted to address this with "A Patient Safety Model of Health Care."

The Patient Safety Model of Health Care provides a simplistic framework consisting of four main system domains interacting within an environment (Emanuel, 2008):

- Workers
- Recipients of care
- Systems for therapeutic action (infrastructure of systems)
- Methods for feedback and continuous improvement

Embedded within this model are existing frameworks, which help us understand how the elements of the system interact; this includes Deming's principles for the methods category and Donebedian for measurement of continuous improvement (structure, process, outcomes). Distributed among the domains are elements that influence safety and are listed in the publication. Figure 1 shows a patient safety model of health care from the book (Emanuel, 2008). The book can be accessed through this link: What Exactly is Patient Safety?

The authors stress that although fundamental aspects of this model can adapt across a variety of settings, specific application will vary based on the nature of the system. Unique aspects of a microsystem will facilitate interventions tailored to the specific needs of a given unit.
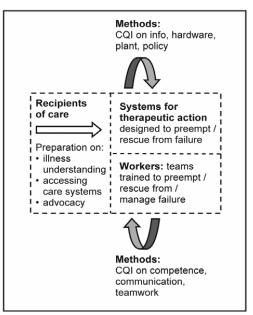

Figure 1. A patient safety model of health care.

Safety Programs – *See Appendix*

>> *Comprehensive Unit-based Safety Program (CUSP)*

According to Johns Hopkins (2014), CUSP is "a five-step program designed to change a unit's workplace culture—and in so doing bring about significant safety improvements—by empowering staff to assume responsibility for safety in their environment. This is achieved through education, awareness, access to organization resources and a toolkit of interventions."

CUSP is a program to get local providers "involved with, and committed to, organization and national-level safety goals." CUSP addresses the importance of culture sustainment and since culture exists at the point of care, leadership-supported strategies for improvement must be targeted there.

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John Hopkins encourages providers to use CUSP because it:
- Focuses on culture
- Integrates safety practices into daily work
- Translates across settings
- Has easy buy-in
- Brings accountability
- Keeps leaders grounded

>> *[Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®)](#)*

   The TeamSTEPPS® program uses an evidence-based teamwork and communication framework for providers as an "intervention for organizational transformation to a culture of safety aimed at optimizing patient outcomes" (TeamSTEPPS® website, 2014). The program centers on skills in four domains (communication, situational monitoring, mutual support and leadership) and consists of a three-phased process that includes the following:
- Pre-training assessment for site readiness
- Planning, training and implementation
- Sustainment

The TeamSTEPPS® website also explains that the program provides safer, higher quality patient care by:
- Producing highly effective medical teams that optimize the use of information, people and resources to achieve the best clinical outcomes for patients
- Increasing team awareness and clarifying team roles and responsibilities
- Resolving conflicts and improving information sharing
- Eliminating barriers to quality and safety

Safety Culture Assessments

   There are several ways to measure or "get a feel" for an organization's culture all the way down to the local level. AHRQ provides [Surveys on Patient Safety Culture (SOPS)](#) available across healthcare settings including:
- Hospitals
- Medical offices
- Nursing homes
- Community Pharmacies

Why use the AHRQ Survey on Patient Safety Culture (2014)?
- The AHRQ surveys have been exhaustively studied and determined to include quantitative dimension- and item-measurement that is overall psychometrically sound to assess patient safety culture.

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- Administered in 30 countries and translated into 18 languages, the AHRQ Patient Safety Culture Surveys are widespread in use demonstrating strong acceptance in the healthcare provider community.
- AHRQ maintains a national benchmarking database, allowing organizations to see their organization compared to the rest of the database.

Other surveys, both formal and informal, include:
- [Safety Attitude and Safety Climate Questionnaires](#)
- TeamSTEPPS® [Teamwork Perception Questionnaire](#)
- CUSP [Culture Debriefing Tool](#)
- Pascal Metrics Safety Culture Survey

Although most assessments focus on care providers throughout an organization, one assessment was found specific to leadership from the US Department of Labor Occupational Safety and Health Administration (OSHA) entitled, [Safety and Health Leadership Quiz.](#)

Other Options to Assess and Evaluate Safety Culture

The survey on patient safety culture is one tool, but other methods and measures should be used in conjunction with the survey to attain the greatest level of benefit in understanding your culture (AHRQ Center for Patient Safety, 2014). Other methods to assess and evaluate culture include:
- Interviews and observational data
- Unit-level turnover reports
- Patient satisfaction reports (HCAHPS)
- Employee satisfaction reports (Press Ganey)
- Data from an internal event reporting system or other internal audits
- Unit surveys
- Medical record reviews
- Root cause analyses
- Event reporting with narratives

Keep in mind that the tools provided should be chosen and used based on your setting and needs. You do not need to use all of the safety culture assessments. For example, you may choose AHRQ's Survey on Patient Safety Culture for a formal 12- or 18-month assessment and CUSP's informal follow-up tool in between. You may also use CUSP's Culture Debriefing Tool, the TeamSTEPPS® Teamwork Perceptions and Attitude surveys, or the Safety Attitudes Questionnaire (SAQ). The choice is yours.

Identify which assessments will work for your organization while keeping in mind the importance of follow-up assessments to evaluate outcomes of safety culture. Please note that free safety culture assessments, such as AHRQ's Survey on Patient Safety, do not include a formal means of interpretation and evaluation. If internal means for interpretation are not available, external options may need to be considered.

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Conclusion

In this white paper, we have explored and discussed theories which impact culture, the safety programs and frameworks that exist to set the patient safety infrastructure, and options to measure safety culture in your own organization down to the local level. Part III, *Effective Change for Quality Improvement,* will discuss principles of change and microsystems thinking that go hand-in-hand with culture to create evidence-based, quality improvement processes that can be successfully sustained within an organization. Information will be provided on one of the many improvement processes, Plan-Do-Study-Act (PDSA). Essential to any change initiative is sustainment. The Standardize-Do-Study-Act (SDSA) process along with reinforcement throughout all levels of an organization can assist to meet this goal. Together these processes will help to drive improvements within an organization down to the unit level. It is through leader and provider engagement in these processes that effective safety cultures can be created leading to the amazing outcomes you seek!

Kari Congenie RN, MSN, CNL
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To learn more about culture of safety, read Part I in the series, *Embracing Patient Safety Culture,* and stay tuned for Part III, *Effective Change for Quality Improvement.*

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APPENDIX

Journey to an Effective Safety Culture - Summary of Safety Culture Programs – Safety Culture (2014)

Program	Author	Purpose	Process	Outcomes	Effectiveness	Links to Program
Comprehensive Unit-based Safety Program (CUSP)	Johns Hopkins Medicine	To change unit workplace culture by empowering staff to learn from and be accountable for safety in their environment Learning from errors Effective teamwork	**Pre-work:** - Create interdisciplinary unit-based safety team including nursing, physicians, pharmacists, and support staff -Partnership with a senior executive -Collection of unit-specific information **Five step continuous, cyclical process consisting of:** -Science of Safety training to staff -Staff identification of defects -Senior executive safety rounds -Continual assessment and learning from defects -Implementation of tools for improvement	Culture focus Behaviors become everyday practice Adaptable across location and healthcare settings Easy buy-in Accountability by staff Keeps leaders grounded	AHRQ, Johns Hopkins, Michigan Health & Hospital Association and BCBS of MI tested the effectiveness of CUSP in reducing CLABSIs in - 100 Michigan ICUs in smaller hospitals Results: Substantial decrease of incidence of CLABSIs within 18 months; 1500 lives saved, $200 million saved New systematic review of studies to identify and assess **interventions used to promote safety culture in acute care settings found top three to be:** **-team training** **-executive rounding** **-multi-component unit-based interventions** low strength of evidence Weaver, S. J., Lubomksi, L. H., Wilson, R. F., Pfoh, E. R., Martinez, K. A., & Dy, S. M. (2013). Promoting a culture of safety as a patient safety strategy: A systematic review. *Annals of Internal Medicine, 158*(5 PART 2), 369-374.	CUSP home page AHRQ CUSP toolkit page Science of safety presentation by Dr. Provonost

			Ongoing CUSP -Real-time data feedback			
Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®)	Department of Defense and AHRQ	Evidence-based framework as an intervention for organizational transformation to a culture of safety Centers on skills in four domains of communication, situational monitoring, mutual support, and leadership	Three-phased process: -Pre-training assessment for site readiness -Planning, training, and implementation -Sustainment	Improve patient safety Improve communication and teamwork skills among healthcare providers Effective medical teams Team awareness and understanding of roles/responsibilities Conflict resolution Elimination of barriers	Scientifically rooted in over 20 years of research and application of teamwork principles 2013 report described the use of TeamSTEPPS® for ongoing team engagement and sustainment for building a culture of safety across hospitals; pilot hospital results of Hospital survey on patient safety culture (HSOPS) showed significant improvement from 2007 – 2010 with system wide results showing similar trends Thomas, L. & Galla, C. (2013). Building a culture of safety through team training and engagement. *Quality and Safety in Healthcare, 22*, 425-434.	TeamSTEPPS® home page TeamSTEPPS® core curriculum 2.0 Encouraged patient safety strategy (team training) in the 2013 Annals of Internal Medicine