With the advent of Hospital Compare and Leapfrog reports on patient safety performance, consumers may choose where to receive care based on this publicly available information. Consequently, quality and safety measures have become marketing tools, and banners and signs can be seen promoting facilities’ standing in national quality/safety programs. This would seem to be a great motivator for healthcare facilities to improve quality and safety, but the continued prevalence of preventable harm of patients does not support this theory.

A different approach has been undertaken by a collaborative of children’s hospitals in the U.S. and Canada, known as the Children’s Hospitals’ Solutions for Patient Safety (SPS) Network that are working together to eliminate patient and employee/staff harm across all children’s hospitals. (We Will Not Compete on Safety: How Children’s Hospitals Have Come Together to Hasten Harm Reduction; Lyren, et al, The Joint Commission on Quality and Patient Safety 2018: 44:377-388). The SPS network, launched with 8 hospitals in 2012, currently encompasses 137 hospitals located in 38 states, the District of Columbia and 3 Canadian provinces. In 2017 SPS reported a 9% - 71% reduction in eight harm conditions by an initial cohort of 33 hospitals, which SPS estimates translates to more than 9,000 children who have been spared harm since 2012, with $148.5 million in health care spending avoided.

This is compelling evidence that an alternative approach to competing on quality and safety measures warrants attention. The original design principles of the SPS Network are: data transparency, ownership of work by hospital CEOs, working with a sense of urgency, agreement not to compete on safety, a commitment to an “All Teach, All Learn” approach, explicit effort to build a culture of safety and development of common goals. The Network’s vision is simple, but ambitious: “All Kids, All Hospitals, All Safe”.

SPS acknowledges that it is only as strong as its member hospitals, and provides direction for staff from participating hospitals – senior executive sponsor, quality leader, quality improvement staff, project manager and data support. Hospital-level champions responsible for prevention process reliability are also key. Hospitals seeking to join the Network must participate in a six-month Getting Started course to guide them through the strategic, tactical and logistic details of the Network.

The Network considers serious safety events (SSEs) to be deviations from standards of care that result in significant harm (death, severe permanent harm, moderate permanent harm, severe temporary harm and moderate temporary harm). SPS hospitals use cultural transformation strategies to reduce SSEs such as, promoting sensitivity to operations, preoccupation with failure, deference to expertise, commitment to resilience and reluctance to simplify interpretations. SPS hospitals must adopt the SSE definitions, rigorously train in structure cause analysis, and universally apply error prevention behaviors and leadership methods based on the Press Ganey/Healthcare Performance Improvement model.

SPS involves patients and families at all levels. Network members are expected to include families in governance and tactical harm mitigation, and the Network tracks and reports adherence to this expectation.

The Network attempts to align definitions and data source whenever possible, but acknowledges that, despite these efforts, data may not be obtained or classified in exactly the same way among hospitals. With regard to sharing data, the Network’s motto is: “this is not benchmarking; the goal is to improve your own baseline over time.”
Medical simulation is important in creating a safe learning environment for clinicians to train, enhance skills and test new procedures before encountering patients. (Brady, “Realizing Simulation’s Potential to Improve Health Care Delivery”) https://www.ahrq.gov/news/blog/ahrqviews/healthcare-simulation-research.html

Simulation allows for safe training of learners engaged in activities that would otherwise be too dangerous to practice. In order to have successful patient outcomes, the Society for Simulation in Healthcare emphasizes the need to train healthcare professionals in team-based communication, reasoning, decision making and skills-based action necessary during stressful situations. In other words, a real-life emergency is not the appropriate time to risk a patient’s life in order to train novices. http://www.ssih.org/

Simulation is widely used in other high-risk industries, such as aviation, aerospace and nuclear power. Simulation based medical training programs can be traced to the late 1960s and early 1970s with the development of a cardiology patient simulator. In the 1980s, Dr. David Gaba developed and implemented the use of computerized manikins for anesthesiology trainees (Aggarwal, et al; “Training and Simulation for Patient Safety”; Qual Saf Health Care 2010). AHRQ has been a consistent supporter of simulation research, starting with a 2006 grant program that evaluated the use and effectiveness of various simulation approaches, which continues today.

Over the past 15 years, there has been increasing growth in use of medical simulations, with a greater variety of simulation equipment, approaches and uses. AHRQ has identified the following approaches/uses of simulation:

- **Part-task trainers** – training of basic skills in an anatomically correct reproduction for such things as vascular access, paracentesis, cardiac assessment, lumbar puncture and gynecological
- **Full-body mannequins** – expand a simulation center’s training capacity by incorporating changing physiology through use of a mannequin that is active and programmable with respect to vital signs, blood gas exchange and heart sounds. Some mannequins have vocal capabilities and enable intravenous access. These full body mannequins are also used for rapid response to failing patient conditions.
- **Team training and simulation** – combine team training approaches with simulation typically focused on non-procedural skills – clear communication, coordination of roles/responsibilities, briefing others on intent and plans, and speaking up when needed.
- **Virtual reality** – an immersive computer-generated environment that simulates physical presence in real-world spaces. Learners may be immersed in an ED, OR, or ICU, assigned roles to play via avatars and interact with the presented environment which will change or lead to different branches as a consequence of a learner’s actions.
- **Standardized patients** – lay people who are trained to portray medical patients with particular medical histories and physical findings. In response to clinicians’ inquires, they may evoke a wide range of emotional and behavioral characteristics that occur in real practice.
- **In situ simulation** – simulation in the actual clinical environment where newly acquired knowledge and skills will be used.
- **Simulation as a test bed** – simulation used to test, detect gaps and improve clinical protocols, technologies and equipment before their introduction on the unit/floor. Using human factors engineering methods, usability testing and analytic tools, unanticipated threats to safety can be identified for improvement.
- **Modeling and simulation** – forecasting the effect of changes to an actual system under different conditions.

Fidelity in simulation has traditionally been defined as ‘the degree to which the simulator replicates reality’.
SIMULATION AND PATIENT SAFETY, CONT.

Simulators are labelled as either 'low', or 'high' fidelity depending on how closely they represent real life. High-fidelity simulations mimic real life as closely as possible and are frequently used as a substitute for hands-on training that would be too risky to execute (e.g. use of flight simulators for pilot training). High-fidelity simulation can be costly, and the level of fidelity is generally a trade-off between the cost of procurement and the objectives of the simulation. (Vontoff, “The Importance of Simulation and Training”, Modern Military Training, August 2017).

Low-fidelity simulations combine closed-ended response options with realistic depictions of key job tasks. Although low fidelity simulations can take a variety of forms, they share two important defining features: they seek to replicate in an assessment format some of the challenges faced on the job; and they are typically quite simple.

Regardless of the level of fidelity, learner feedback is essential to the effectiveness of simulation training. A lack of feedback can lead to:
- Assimilating the wrong learning objective;
- Not realizing what the desired behaviors should be by not focusing on them;
- Not transferring skills to clinical practice; and
- Spending increasing time on only one aspect of training.

When considering simulation activities, the following factors should be considered:
- How well can the activity be controlled;
- How well the activity matches the real world; and
- How well the activity will involve learners in meaningful engagement.

One significant aspect of high fidelity simulation is the ability to play back videos of the scenario for the individual or team involved in the simulation. This provides tangible evidence of what was or was not said. Additionally, this can provide feedback with regard to how learners behave under stress. High-fidelity simulation is useful for skills involving complex interactions requiring integration of cognitive and psychomotor skills coupled with interaction with others in the healthcare setting.

The biggest restraints to simulation training are cost and access. However, technological changes have led to multimedia simulations, such as use of handheld devices, portable simulators, etc. (Using Simulation in Clinical Training https://faculty.londondeanery.ac.uk/e-learning/using-simulation-in-clinical-education/html2pdf)

SIMULATION AND PATIENT SAFETY, CONT.

Teamwork - Effective teamwork is essential to safe patient care, and can be enhanced with simulation. Simulation-based team training focuses primarily on developing team processes (e.g., communicating, planning, deciding, coordinating, adapting, monitoring) that support high performing teams. Simulations can also build specific skills, such as proficiency in pre-briefing and de-briefing that support development of team cognition, particularly in settings with low levels of team member familiarity. Simulated experiences can provide opportunities for team members to exchange ideas and insights, thus building collaborative knowledge and shared understanding. Simulation-based training can be used to develop individual skills that will translate into team settings and can assist with ad hoc team functioning (e.g. resuscitation teams, trauma teams, etc.). Simulated clinical experiences can help individuals develop knowledge about the expertise and skills held by other professions and about the various roles of the team. Individuals can build knowledge of protocols and procedures (e.g. sepsis care bundles, cardiac resuscitation algorithms) that facilitate a shared, consistent team approach. (Fernandez, et al; “Developing team cognition: A role for simulation”; Simul Healthc. 2017 April)

Response to Adverse Events - Response to adverse events can lack patient-centeredness. In order to help improve the response to patients/families the University of Washington HealthPact Patient and Family Advisory Council (PFAC) created a simulation exercise to help stakeholders understand the needs of patients and their families following adverse events. (Gallagher, et al; “Improving Communication and Resolution Following Adverse Events Using a Patient-Centered Simulation Exercise”; Patient Safety & Medical Liability, supported by AHRQ grant no.R18HS019531). Lessons learned from the simulation related to the response to adverse events included:
- The organization’s current response lacked patient-centeredness because it could be siloed and uncoordinated;
- Patients interests were not the top priority for many stakeholders involved in response to adverse events;
- Experiential, patient-directed learning can help stakeholder appreciate what it feels like to be a patient who has experienced an adverse event; and
- Stakeholders’ interest in the patient perspective and desire to improve the response to adverse events was inspiring to patient advocates.

Organizations can use this simulation exercise with minimal modifications.
SENTINEL EVENT TEAM UPDATES

Our next collaborative session will be held October 10, 2018

Treating Behavioral Health Patients in the ED or Outpatient Settings: Challenges and Strategies