The Future of Training for Patient Safety and Quality

This issue of *infocus* recaps the 2012 FOJP Health Care Risk Management Conference—Training for Patient Safety and Quality, and explores the use of team-based and simulation training at all levels of medical education.

This edition also explores “What Is TeamSTEPPS? What Impact Does It Have on Patient Safety and Quality?” and “Creating the TeamSTEPPS Improvements.” “What Is Just Culture?” examines the need for successful implementation of new training methodologies by understanding Just Culture’s valuable approach to human fallibility.

What current medical training methods have proven effective in promoting improvements in patient safety and quality? How do we inspire cultural changes that support those methods? These were questions addressed at FOJP’s 25th Health Care Risk Management Conference, held March 7 in New York City. This silver anniversary conference weighed the idea that health care professionals can be successfully trained through collaboration across all clinical practices—and that health care institutions must consider shifting from traditional ideas of undergraduate, graduate, and CME training to alternative training models. Newer training methods insist that patient safety and quality care result from training that requires physicians, nurses, administrators, and other providers to work together and share responsibilities for a common purpose—along with the development of a culture that embraces systems and behaviors that can sustain the changes.

Experts weighing in on advances in improving patient safety and quality included the following:

- Kenneth L. Davis, MD, President and Chief Executive Officer of The Mount Sinai Medical Center
- John Foley, Performance Expert, Former Lead Solo Pilot of the U.S. Navy’s Blue Angels aerobatics team
- Richard Satava, MD, FACS, Professor of Surgery at the University of Washington Medical Center and Senior Science Advisor to the U.S. Army Medical Research and Material Command
- Colleen O’Connor Grochowski, PhD, Associate Dean for Curricular Affairs at Duke University School of Medicine
- Alison H. Page, RN, MS, MHA, Chief Executive Officer of the Baldwin Area Medical Center, Baldwin, WI

The acceptance of change in long-held training processes doesn’t happen without cultural changes inside medical institutions. A central goal of the FOJP conference was to inspire attendees to promote this sort of cultural change within their own organizations. The purpose: to help motivate high-performance professionals to work together to improve patient safety and quality, while accomplishing complex, difficult tasks.

Similarly, the concept of Just Culture furthers the understanding of how an organization can handle safety issues through better processes and systems—as opposed to identifying and punishing individuals in the hope of improving quality of care.
Patient Safety and Quality: The Value Proposition

Setting the Stage of the Future for Training for Patient Safety and Quality

Dr. Davis began the conference by reviewing the status of medical training at Mount Sinai School of Medicine. He stressed the importance of training for patient safety and quality across an entire medical organization—including practicing professionals, those in residency programs, new students, and all levels of employees. He said that quality training is "the most important component to improving and executing care," and "the reason why we are here."

Dr. Davis looked at simulation training through the CEO lens. He said that the possibility for errors is reduced with the simulation training approach. "There were difficulties in the past and we are faced with difficulties ahead. We will suffer penalties for undesirable outcomes without quality training," he said. He linked deficient training to numerous issues: "readmissions, hospital-acquired infections, low patient satisfaction, overutilization of resources, and other adverse events that result in more expense and less revenue to be shared." He warned that "with joint accountability, if we do not do something in these areas, we will be penalized."

With new models of health care delivery in which there is more shared risk, as with accountable care organizations, bundled payments, and capitation, said Dr. Davis, health care organizations will be punished for overutilization of resources, preventable hospitalizations, excessive length of stay, and any adverse event that causes the use of more resources or requires a patient to stay in the hospital longer.

“In addition to what we have been doing in readmission programs and adjoining health homes,” Dr. Davis explained, “we are placing a greater emphasis on improving outcomes and diminishing errors through simulation programs and team teaching exercises.”

He characterized simulation as “the teaching method used in health care education to replace or amplify real-patient experiences among learners with scenarios designed to replace these encounters”—including the use of models, mannequins, and standardized patient and computer interaction. Simulations provide myriad medical possibilities and procedures for students and professionals alike throughout the organization. According to Dr. Davis, simulation training can be used with clinical fellows, clinical specialists, and already board-certified practicing physicians for training and in preparing for recertification exams.

As an example from Mount Sinai, Dr. Davis pointed to a computer-generated scenario of symptoms, in which a student needs to determine the nature of an abdominal mass; using interaction with the computer, the student determines the workup and the differential diagnosis. In another case, Dr. Davis noted the use of an actress-patient to teach students the various aspects of a workup. In addition, he said, a resuscitation mannequin could be a key tool for the simulation of trauma for the training of students and faculty in which they can repeatedly practice the behaviors applicable to a live scenario. With simulation training, the learning is hands-on and task-oriented, he added.

The Mount Sinai chief cited an Association of American Medical Colleges (AAMC) survey report on the widespread application of simulation in medical schools across the nation. Most, but not all, medical centers have adopted simulation, he said, and in the next five years, it is expected that the use of simulation will increase to 100 percent. Some 84 percent of the students in schools that participated in the survey reported exposure to simulation in the first year of medical school. Teaching hospitals were found to have a lower use of simulation, but its use increased over the four years of medical school. Dr. Davis said that Mount Sinai uses simulation almost immediately for its medical students across all four years, and its use increases throughout medical school education. He added that the use of simulation with residents decreased through the course of studies as they became more competent with clinical exposure.

"Most have adopted simulation as the definitive method of training,” commented Dr. Davis. He further pointed out that Mount Sinai has at least eight separate simulation locations across all the specialties that use simulation as an essential part of their core curriculum. Training takes place in mobile units and centralized and decentralized sites across campuses, with several others under development.

Turning to team development, Dr. Davis suggested that a medical team needs to operate like an orchestra: “What matters is that the team makes good music together—when all are accountable, getting along, taking responsibility, focusing on communication, and eliminating intimidation.” He continued, “You don’t have to like all the people on your team, but you do have make good music.”

Dr. Davis said that teams must communicate well and determine who can be co-leaders. That way, if something goes wrong with the leader, someone else can take over and members can immediately speak up.

According to Dr. Davis, winning teams communicate their core values from team to team, decade to decade, and generation to generation. He said that these core values are about sacrifice, hard work, and winning. In this vein, he said, “for 160 years Mount Sinai has shared a cultural value to..."
help people in need, regardless of their ability to pay. This core value has been transmitted from generation to generation.”

Dr. Davis strongly advocated the idea that cultural core values can be shared from team to team through team simulation training. He said that “teams facilitate ideal patient care.” Other key aspects of team training included “shared leadership roles, accountability for each individual, team purpose, a collective work product, open-ended discussion and problem solving, performance assessment based on collective work product, and discussions where a team reviews work and decides its direction collectively.”

Team building and learning have taken on importance, Dr. Davis said, because the former education model of individualized teaching of medical students emphasized competition, not cooperation. He said that the “culture of competition” has improved, but it still exists in board testing and placement for residencies.

Medical school instruction is transitioning to the team-training model, Dr. Davis said, encouraging core competencies that focus on knowledge, skills, and attitudes fostered in team simulations that are built into four years of medical education. Advanced residents close the loop by becoming educators for first-year students.

Dr. Davis said great strides had been made in team training at Mount Sinai Medical School. From day one, he noted, medical students are assigned to groups of six, and given assignments in which they must make decisions together—and then report on how the group functioned, and how it handled its strengths and weaknesses, challenges and triumphs. All these teams have a purpose, and must develop trust, share a collective work product, and accommodate people’s strengths and weaknesses.

In this setting, Dr. Davis said, there are critical skills to be taught to all medical students: “how to accept responsibility, resolve conflict, talk to each other about a shared mission with clear performance objectives, be effective collectively—not individually—and to learn to trust each other.”

From Introduction to Medicine to Histology
All courses at the Mount Sinai School of Medicine (MSSM) are taught in teams, at least in part, Dr. Davis noted. In histology, students are challenged with teaching the rest of the class four different topics using a variety of tools, including virtual microscopy and digital slides: “Individual students evaluate themselves on how they perform, while the group looks at how well they worked as team members.” Continuing, Dr. Davis said, “Often for the first time, students hear what others think about them. They will hear comments such as, ‘You weren’t helpful, you weren’t prepared,’ or, ‘You’re a great leader and we appreciate the effort you put in.’ This critical feedback loop often is lacking in medicine.”

Dr. Davis noted that simulation training is widely used by students and house staff at Mount Sinai. For instance, first-year anesthesiology residents pursue a seven-week, forty-hour course in which they learn core competencies by simulation in groups of three. Advanced residents receive continued training and “close the loop,” once again, by participating in clinical resident education and teaching the first-year students’ physiology laboratory.

Simulation training is widespread, well accepted, and indispensable, observed Dr. Davis: “The value proposition yields better outcomes at lower costs and is essential to our medical centers as we adjust to diminishing revenue streams.”

Dr. Davis next turned his attention to TeamSTEPPS—Team Strategies and Tools to Enhance Performance and Patient Safety. This concept was developed by the Department of Defense and the Agency for Healthcare Research and Quality to improve patient safety through better communication and collaboration.

Several years ago, Mount Sinai professionals underwent TeamSTEPPS instruction to become master trainers, Dr. Davis reported. TeamSTEPPS provided tools to help teach the pillars of the program—communication, leadership skills, monitoring high-risk situations, and providing mutual support. These TeamSTEPPS veterans became the vanguard for team formation and team teaching in OB/GYN.

Dr. Davis credited TeamSTEPPS with helping to improve documentation, once an Achilles heel for physicians. “We did the task right,” he observed, “but we didn’t write it down—creating problems in legal situations. When we did simulation and team teaching, the documentation improved and we were able to breathe easier.”

“Accepting, promoting, and embracing changes—such as enterprise-wide standards in simulation training and team-based learning—can help an organization lead the way in delivery of quality care, research, and education,” Dr. Davis concluded.

1 Passiment, M., H. Sacks, G. Huang and C.J. Shapiro, Medical Simulation in Medical Education: Results of an AAMC Survey, September 2011.
Talk about high performance! John Foley, former lead solo pilot for the U.S. Navy’s Blue Angels, is also a Stanford Business School graduate, holds three master’s degrees, has worked with venture capitalists in Silicon Valley, and is currently an internationally known speaker to people in high-performing organizations worldwide.

Mr. Foley spoke from experience as he discussed high-performing teams operating on the tenets of his trademarked Diamond Performance® Framework—belief levels, brief, contracts, and debrief with center point focus. Mr. Foley acknowledged that the flight deck of an aircraft carrier is one of the most dangerous places in the world—but said it was much safer with principles such as team dependency and a performance framework.

“How do you sustain high performance?” Mr. Foley asked his audience. For an answer, he looked to the core competencies of strategic management—vision, plan, execution, and feedback. Mr. Foley suggested that strategic vision translates to belief levels, adding that if leaders must create an environment in which there is high commitment and buy-in, then belief levels have to be high.

He explained, “Belief levels are the process of developing a vision for the organization’s true potential and deepening the commitment and buy-in to that vision.”

Citing the cognitive psychology tenet that individuals are known to perform at their belief levels, Mr. Foley asserted that if we can elevate a team’s belief level, we can elevate an entire organization. “Elevate the hospital’s belief level around safety,” he said, “and success will follow.”

Mr. Foley explained that, in order to connect to your beliefs, you need a plan—and if you fail to prepare or focus, your beliefs don’t matter. This plan is defined in the brief—another key to high performance—characterized by “the practice of creating disciplined standards for preparation and planning through focus, processes, and checklists.”

Mr. Foley showed a video of the Blue Angels’ briefing room, where the leader helped his team prepare and focus their minds on high performance so they could execute under pressure. The video showed the leader verbalizing every maneuver exactly as the team would hear it in their radios. The team visualizes—and flies the maneuvers in their minds. “The brief allows for concentration and focus,” he said.

“We did this every day,” Mr. Foley continued. “We created a huddle, and then briefed on the critical factors. We did not wing it. We were very detailed in everything we needed to do.”

Continuing his remarks, Mr. Foley moved to the concept of CenterPointTM, which he explained as the alignment of individuals.
and teams on priorities and a focal point. “How do you focus a team?” he asked. “How do you get everyone aligned? How do six jets line up perfectly straight in the air?” He answered that an entire medical organization can cross over a center point of patient safety—shown in reduced errors and better outcomes—by alignment through the application of core competencies and simulation. However, he cautioned that individuals must adapt and remain flexible as they focus on their center point of safety, because so much change is going on in the medical profession.

On the issue of execution—actual team performance of demanding tasks—Mr. Foley looked to his own notion of using agreement to build trust to achieve greater levels of execution.

“The central question here is: What are the key verbal contracts between you, your teammates, and clients? This is about being able to trust,” said Mr. Foley. “You need to know what people will do in an emergency. Say something doesn’t go according plan. You must have the belief it will be okay. There is that closeness, a bond. There is a contract. There is trust. Things will be okay because you have discipline, focus, and a contract.”

Mr. Foley closed with a discussion of debriefing—a process that he compared to feedback in the strategic management model. “Debriefing is a system for continuous improvement that creates an environment of open and honest communication, reinforcing accountability,” he explained, asking, “Does your team have commonly understood and adhered-to processes that create a safe environment for capturing critical learnings—and for celebrating success?”

In the debriefing room of the Blue Angels, he said, there was an atmosphere of unvarnished honesty, where comments are accepted and embraced without blame or shame.

“Everyone got a chance to comment on what we did right, and what needed to change,” Mr. Foley said. “This reinforced the idea that ‘you can count on me, you can trust me.’ It promoted a natural state to trust.”
Beyond Borders: The Future of Medical Simulation Training Enterprise-Wide

Richard Satava, MD, FACS
Professor of Surgery, University of Washington Medical Center
Senior Science Advisor, U.S. Army Medical Research and Material Command

Dr. Marvin Fried, Department Chairman of Otorhinolaryngology–Head & Neck Surgery of Montefiore Medical Center and Albert Einstein School of Medicine, introduced guest speaker Richard Satava as “the father of medical surgical simulation,” who continues to explore new areas including robotics and plasma medicine—and who “is considered one of the country’s leading medical innovators.” Dr. Fried added that Dr. Satava is taking the art of hands-on surgical simulation to new heights, rivaling John Foley’s Blue Angel aerobatics.

A practicing surgeon, Dr. Satava posited that, whereas our “current medical education is based on the industrial age standards and methods, we are living in the information age.” In other words, he said, “we are literally out of our era.” He stressed that the information age goes far beyond merely putting medical records into computers.

“While computers manage the present by helping us analyze data, and the Internet allows us to communicate and collaborate,” he said, “simulation is the only way to change the future—by predicting, planning, educating, and training.” He added that simulation is about reducing risk, increasing efficiency, and performing faster and more cost-effectively than before.

“Simulation is a hospital enterprise solution,” he said, “that moves beyond merely putting medical records into computers.

According to Dr. Satava, “Simulation has existed for 90 years in every safety-conscious enterprise, including the military, aviation, and nuclear industries—in anything that has to do with safety, or wherever there is risk—except health care. Now it is time to use simulation creatively as a pathway to the future of medical training and performance.”

An impediment to the growth of simulation, Dr. Satava said, is the fact that some medical organizations delegate simulation training to the role of stepchild in the IT department, where resources are scarce and connectivity and hardware take precedence over education and training. The remedy, Dr. Satava urged, is for medical organizations to establish departments that are 100 percent dedicated to simulation. Today, simulation is pervasive—EXCEL is a simulation program, as are financial and workflow planning programs, as well as CAD/CAM in engineering. Simulation needs to be an enterprise-wide department, independent of IT.

At the same time, Dr. Satava highlighted the importance of integrating simulation into medical school curricula. He characterized the current shift toward simulation training as the biggest “revolution” since the century-old Flexner report. That study helped medical training transition from apprenticeship to higher admission and graduation standards and formal structured residency programs, with the protocols of mainstream science applied in medical teaching and research. “The old approach had very little to do with team training and was very paternalistic, with the focus on the physician or the hospital system,” said Dr. Satava. “The new curricula must be about teaching the team as a whole with the focus on patient safety,” he said. “The paradigm shift is to train health professionals to expect the highest safety levels possible—100 percent competency, not 75 percent or 80 percent.” To ensure the quality of skills training, Dr. Satava noted that the American Board of Surgery determined in 2009 that physicians must pass Fundamental Laparoscopic Surgery (FLS) simulation tests. He said if the physicians do not pass the FLS simulation, they are not eligible to sit for the boards, their applications are returned as incomplete, and they cannot become surgeons. “We are looking for other disciplines to follow this improved certification process,” he appealed.

Dr. Satava suggested that simulation curricula take into account the views of all stakeholders. “Simulation curriculum development must necessarily include department chairs and program directors, plus the faculty who will teach the learners and representatives from the learners. Licensing authorities who certify the individuals ultimately have the responsibility to approve and guarantee the quality of the training the individuals receive.”

He continued, “When developing a curriculum, it is important to consider the certifying agencies who can make sure the outcomes desired are being trained through simulation. It’s best not to start with the simulator, but rather with the input from the ‘boards’ (for certification), by the specialty societies who can validate the training and the clinical experts (who will perform the training).” In addition, the curriculum must include teaching errors—what are the common errors, how to avoid them, and, should they occur, how to correct the errors so there are no consequences or bad outcomes.

Dr. Satava encouraged the creation of curriculum development templates for simulation training, which would allow for a standardized process of validation across the board for all users. “We must break apart the silos between disciplines in order to guarantee safety needs,” he said. “We need a common, not a competitive, curriculum. Pilots have standards throughout the aviation industry for training—and we need to develop similar common standards for simulation training in all medical disciplines with processes and results that can be validated and compared.”
Dr. Satava cited a 1985 study by Dreyfus and Dreyfus, which suggested that surgical trainees might use avatar-like virtual patients presenting with the full complement of a disease’s symptoms to improve the quality of learning. He used the example of the entertainment industry technology used in the movie The Curious Case of Benjamin Button, in which Brad Pitt’s features were digitally scanned and then extensively manipulated for the screen. The technology is in use in other industries, he said, and can be readily applied to medical training. By providing “virtual patient actors” that present with many variations of a particular disease and many different diseases, the student can receive a planned, structured training which does not depend upon the few patients they see in the clinic, or the surgical cases they participate in during a surgical rotation.

Dr. Satava again pointed to technology when he suggested that student trainees might use avatar-like virtual patients with mannequins, cadavers, animals, as well as computer-generated virtual training, and educational games can be a powerful and incentivized way of training, particularly for digital natives who grew up using computers and smartphones. He said that young learners have strong peripheral brains that don’t understand why they shouldn’t reach for their digital devices to solve problems. “They work completely differently, and we have to understand this in order to train them effectively for safety.”

Dr. Satava echoed Mr. Foley by endorsing the concept of mission rehearsal. “Procedural rehearsal with CT scans that we can create from patient-specific data helps visualize what you are going to do in an actual surgery.” He said that—just as in baseball, where players go to the on-deck circle to warm up, and in an orchestra where musicians warm up before playing—it makes sense that surgeons should also “warm up” just before a procedure, providing better results for safety and quality outcomes. Dr. Satava commented: “Simulation practice can reduce operating time by 10 to 20 percent, and reduce errors by 30 percent—just by getting warmed up.”

Dr. Satava reinforced the case for simulation practice by citing the work of Jacques Marescaux at his simulation training center in Strasbourg, France. There, he conducted rehearsals for complex liver surgery, and CT scans so that procedures were practiced in two or three different ways. “When he eventually operated on the patient,” Dr. Satava said, “he decreased errors by 60 percent, and operating time by 25 to 30 percent, because he was able to practice.”

Commenting on the use of robots to enhance proficiency and improve outcomes, he explained: “A robot is not a machine, it is an information system (with eyes, hands, etc.) that allows the physician to have greater precision, remove all hand tremors, and see well beyond the physical limits that are normal for a human. When trained properly, a surgical robot provides better visualization, dexterity, precision, and control than open surgery, while enabling the surgeon to perform procedures through tiny, 1- to 2-cm incisions.”

Dr. Satava spoke robustly in favor of sharing among institutions. Here, he suggested the example of the American College of Surgeons Consortium of Accredited Education Institutes, which shares research, best practices, and data on simulation training among 68 certified medical simulation centers. “Sharing essential data on the most common errors we are making and where we should focus our next generation of training is critical,” Dr. Satava said. “This will inform how we need to modify the training to address errors and thereby to increase patient safety.”

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The Introduction and Value of Team-Based Learning In the Medical Setting (Interactive Exercise)

How better to demonstrate the power of a team-based learning (TBL) strategy than to dramatize its principles for a room filled with 500 people? Dr. Grochowski facilitated just such an exercise for conference attendees. Through it, she gave participants first-hand experience that validated the benefits of TBL and showed what it felt like to learn in a team, as medical students currently are doing.

Interactive team-based learning, which was first organized in business schools, is now applied to medical education and widely used at Duke, said Dr. Grochowski. It provides a number of valuable benefits, from enhanced student engagement to a deeper level of interaction between faculty and learner.

Dr. Grochowski stated the case for TBL this way: “Developing, implementing, and refreshing the curriculum enables learners to test individual knowledge and then mobilize resources in small groups, where they can apply that knowledge to real problems and maximize their collective knowledge. The problem-solving ability thus conferred has power beyond the classroom.”

She added that TBL is known to both improve understanding and lead to longer retention among students. “The literature suggests that learning with TBL is more thorough, rewarding, engaging, and fun,” said Dr. Grochowski. “We expect our graduates to practice in teams, yet we weren’t training them that way. TBL allows for collaboration in learning and a methodology to encourage it.”

Providing background for her listeners, Dr. Grochowski cited TBL-related reports and studies in the development of curricula for health care students. These included the following:


  At least 44,000 people, and perhaps as many as 98,000 people, die in hospitals each year as a result of medical errors that could have been prevented, according to estimates from two major studies. The breakdown of communication is often cited as a common factor in causing errors.


  The report suggests fundamental changes in how medical professionals are prepared in order to close the gap between what patients deserve and what they are getting.


  All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics.

Another set of data supporting the constructs of TBL highlights the integration of current knowledge about the biology of learning with educational strategies. “Literature clearly identifies that active engagement in learning, including accountability and problem-solving, increases learning, retention, recall, and application of the learned information,” stated Dr. Grochowski. “The collective intelligence, where investigators have shown that teams perform better than individuals, is a skill that can be learned, and practiced in the TBL exercises.” She continued, “The basis...
for adult learning is to learn in context, learn through doing, and putting the newly learned information to immediate use.” This is what TBL is, at its best.

Dr. Grochowski next examined the three phases of TBL that are showing increased use in health profession education:

- **Preparation**: Prior to attending class, students watch, read, and prepare through a pertinent exercise, and thus arrive with some basic knowledge.

- **Readiness Assurance**: When they arrive at class, students take an individual closed-book quiz to assess their understanding of the material. The instructor receives immediate feedback on individual performances and can tailor discussions to address concepts that were revealed to be particularly challenging. Students then work in teams to gather further information and discuss the rationale behind some additional, but related, learning concepts. The faculty then administers a second closed-book quiz that the group takes together. It should be noted that teams always seem to score higher than individuals.

- **Application of the Course Concepts**: While still working in teams, students take their new knowledge and apply their learning to a problem-solving scenario where there might be four to five options identified as possible solutions. With time to work on the problem, each group must come to consensus on the single best answer among the options listed and be able to respond during discussion about their rationale for the response.

Instead of coming to class and listening to a lecture and then completing an exercise at home, this approach requires students to come to class prepared, allows faculty to engage in a deeper level of content, and creates a very interactive environment for learning.

Closing the circle, the team exercise facilitated by Dr. Grochowski consisted of audience participants reading an article related to the exclusion of obese patients who present a potentially higher risk to an OB practice. This was the preparation phase. Next, the individual quiz tested understanding and recall of the reading material, which included industry standards and recommendations for ethical behavior. The exercise teams took a group test and then reviewed a practical application of the issue to a scenario-based problem in which an OB practice leader needed to make decisions regarding the policy for the practice. Finally, a question was posed that required teams to select a single answer as a group, followed by a faculty discussion of the results. As expected, the group quiz results demonstrated that group work yielded better overall scores than did individual work.

“Professionals at all levels—medical students, cross-disciplinary medical professionals, nurses, administrators, and attorneys—all work in teams,” Dr. Grochowski concluded. “It’s essential and beneficial to provide an opportunity to learn in teams, too.”
Ms. Page is no stranger to change management in the health care industry. At one time a practicing nurse and chief patient safety officer, and now as a chief executive officer, she believes that people at all levels can bring about change. Ms. Page urged her audience to make a difference in their health care workplaces when they returned home by understanding the concepts of the Achievement Triangle, Appreciative Inquiry, and Just Culture.

Ms. Page expressed harmony with Dr. Davis’s orchestra analogy—in which players are highly proficient and competent, but are always listening for how they fit into the orchestra, in order to make good music. She pondered out loud about how a group of individuals becomes a mellifluous orchestra. “They don’t just show up and play together, as we sometimes do in health care,” she said. “When pharmacists, nurses, and physicians train on different floors, and then are expected to perform together, the results may not be entirely harmonious.”

Ms. Page asserted that health care professionals must learn who else is on their team, how they are credentialed, and precisely what competencies other professions require. She explained that people within individual disciplines may not have a clear idea of the roles of other health professionals and thus speculate about the competencies of nurses, pharmacists, physicians, or administrators. This would be analogous, she said, to not knowing the sounds and capabilities of other instruments in the orchestra, but still being expected to play in flawless congruity.

On the issue of institutional change, Ms. Page observed that most professionals are smart and well-intentioned, but must be motivated to change from the inside out. “Good leaders change the status quo, encourage new things, and make things happen,” she said, “when everyone on the team thinks they make it happen.”

Ms. Page then discussed a process for change. Applying it, an organization:

1. **Asks itself: How does it function right now?**
   
   This is a diagnostic question for the organization. “There are times that individuals don’t know how the system works,” she said. “Asking this question can provide an understanding of the culture—the current state of things. But be prepared: You may get five different answers on the process.”

2. **Develops a design for the future.**
   
   At this point, leaders and stakeholders consider the possibilities. If the organization was at its best, what would it look like? What systems would be in place and what behaviors would be expected?

3. **Evaluates.**
   
   Leaders and stakeholders evaluate the effectiveness of the systems and the behaviors, and modify them according to the results.

4. **Solicits feedback to redesign.**
   
   Based on the evaluation, the systems and expected behaviors are redesigned, as with Step 2.


Ms. Page suggested optimism and fairness in an organization’s approach to encouraging change by highlighting three simple rules. “Assume goodness—that people are doing their best,” she advised. “Choose joy—bring happiness to the process, and proceed with grace—there is always a gracious way to reach resolution. This approach allows for a perspective that holds that someone doesn’t have to be ‘right’ or ‘wrong.’”

Ms. Page next summarized the Achievement Triangle, Appreciative Inquiry, and Just Culture, with a set of synopses for these philosophies and strategic approaches to change. They proceeded in this manner:

1. **The Achievement Triangle** consists of clarity of vision, process, and the will to make change happen.
2. **Appreciative Inquiry** is a positive philosophy for change that avoids blame, while encouraging collaboration and positive energy. It employs several problem-solving approaches:

   a. **Discover**: Determine the root cause of what went right, and debrief on what it would require to do those right things again.

   b. **Dream**: Decide what might be—if things were perfect, with no restraints—the best teams and scenarios imaginable.

   c. **Design**: Discover the possibilities—as with who is doing change really well: What are the best practices or options available in government, administration, management, and individuals?

   d. **Deliver**: Implement what the organization will be or do. What systems and what behaviors will be expected? What changes should there be at every level? Who commits to this way of doing things?

3. **Just Culture** is a concept that was originally promoted by James Reason in the early 1990s. Professor Reason described a Just Culture as an atmosphere of trust in which people are encouraged to provide essential safety-related information, while also clearly defining the line between acceptable and unacceptable behavior. Contributing further to Just Culture, David Marx expounded on the need to evaluate and redesign behavior systems in which areas for error can be anticipated—either drifting from expected compliance or blatantly abusing expected behaviors. Ms. Page explained it this way: “Just Culture assumes an open, fair, and reasonable culture, a learning culture that cares about designing safe systems and that manages behavior effectively by clarifying expectations and consequences.”

   Just Culture presumes there are three ways in which individuals make behavioral choices that could lead to errors:

   a. **Human error** (e.g., slips)

   "We all make mistakes, we should never punish people for that,” said Ms. Page. “There are errors of commission and errors of omission, both of which suggest the need for a better-designed system. Importantly, mistakes often happen in high-stress environments such as the ICU and ER.”

   b. **Risky behavior** (e.g., taking shortcuts)

   “This is a drift into noncompliance with an expected behavior,” Ms. Page said. “Individuals often don’t see the purpose for compliance or don’t have time,” she noted. “Systems need to be tighter, behaviors need to be clarified, and purposes need to be explicitly defined. We also need ways to keep each other from drifting into noncompliance by using catch phrases that will correct behavior in the moment. There must be a culture that supports this brand of honesty. Those who drift may require teaching or coaching.”

   c. **Reckless behavior** (e.g., blatantly ignoring required safety steps)

   Ms. Page was clear that sometimes one knows the rule, but doesn’t care. This kind of behavior is determined to be unacceptable and punishable.

As a successful leader in a 21,000-person health care organization in which TeamSTEPPS was implemented in the OR, ICU, and ER units and the mortality ratio was halved between 1998 and 2011, Alison Page has the right to answer the question, “Do Achievement Triangle, Appreciative Inquiry, and Just Culture make a difference in patient safety and quality outcomes?”

“It’s all about processes, excellent communication, and systems and behavior processes put in place,” she concluded. A healthy fusion of ideology and philosophical approaches, indeed.
What Is Just Culture?

With tens of thousands of patient deaths in the United States each year attributed to human error by health professionals, it is unsurprising that the medical community shows intense interest in how human error is addressed by health care delivery systems. One approach that has gained acceptance in recent years suggests that organizations formally tell their employees that leadership understands that human errors are bound to occur, and that the organization will deal with them in a largely nonpunitive way. This manner of handling error is called “Just Culture.” It consists of a leadership training and organizational management methodology predicated on a nonpunitive attitude toward human fallibility in the context of patient safety. Just Culture encourages staff to openly identify and discuss human errors—including actual staff blunders, near misses, and risky actions—out of a conviction that openness will lead to improved processes, systems, and patient safety.

In the early 1990s, James Reason, a professor of psychology at the University of Manchester, theorized that even in the best organizations humans are fallible and errors are to be expected. The long-standing tradition was to blame the individual for the unsafe acts—forgetfulness, lack of attention, poor motivation, carelessness, negligence, and recklessness. But are there conditions under which individuals work where defenses can be built within the organizational system that could avert errors or mitigate their effects? Since the 1990s, one of the champions of Just Culture has been David Marx, JD, a system safety engineer, legal scholar, and founder/CEO of a risk management firm, Outcome Engenuity. In the pursuit of safety and risk-reduction, Mr. Marx and others have developed a body of literature that accepts human error as ubiquitous and inevitable—but also a valuable source of information that can help inspire a safer environment by influencing changes in processes and behaviors.

Mr. Marx asserts that a preoccupation with perfection in patient safety is wrong-headed, because when errors are reported, the person responsible is often suspended, reprimanded, or fired—outcomes that offer little opportunity to learn from mistakes and prevent them from happening again. This punitive mode, according to Mr. Marx, has created a culture of fear in which those who make mistakes or experience “near misses” are afraid to report them. It is estimated that only 2 percent to 3 percent of serious medical mistakes are ever reported.

On the other hand, he emphasizes that a blame-free culture is not the answer, either. According to Mr. Marx, most patient injuries result from either simple “human error”—people who are trying their best but are tripped up by lack of knowledge, distraction, or fatigue—or from the “at-risk behavior” of people taking shortcuts in established procedures. Beyond that, people may act recklessly without regard for patient safety, or even intentionally try to cause patient harm. Mr. Marx advocates applying one of three approaches when serious errors occur (see “Just Culture—Accountability for Our Behaviors”):

2. Coach at-risk behavior (when a choice has been made based on excessive risk).
3. Punish reckless behavior.

Within some organizations today, says Mr. Marx, the single biggest determinant of whether someone will be held accountable is the extent of patient harm. “This takes on the look of a ‘no harm, no foul’ system of error justice,” Mr. Marx maintains. “The penalty depends on the severity of the outcome, not the riskiness of the behavior.” This approach puts the emphasis in the wrong place, he insists, because it is never acceptable to take a risk with someone’s health or life.

Unlike the “culture of blame,” Just Culture embraces shared accountability, where health care institutions are responsible for the safety of their systems and for supporting safe choices concerning staff, patients, and visitors (see “Goals for a Just Culture”). Staff members are held accountable for the quality of their choices—knowing that even though they may not be perfect, they can always strive for the best choices possible when providing care. “We want to make a safer system,” Mr. Marx says, “but you can’t do it by imposing a more punitive system. We do it by expecting more, based on good system design and the behavioral choices of individuals in the system.”

RESOURCES:
7. Ibid.
8. Ibid.

Just Culture—Accountability for Our Behaviors

<table>
<thead>
<tr>
<th>HUMAN ERROR</th>
<th>AT-RISK BEHAVIOR</th>
<th>REckLESS BEHAVIOR</th>
</tr>
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<tbody>
<tr>
<td>Inadvertent action: slip, lapse, mistake</td>
<td>A choice: risk not recognized or believed justified</td>
<td>Conscious disregard of unreasonable risk</td>
</tr>
<tr>
<td>Manage through changes in:</td>
<td>Manage by:</td>
<td>Manage by:</td>
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<tr>
<td>Processes</td>
<td>Removing incentives for at-risk behavior</td>
<td>Remedial action</td>
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<td>Procedures</td>
<td>Creating incentives for safe behaviors</td>
<td>Punitive action</td>
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<td>Training design</td>
<td>Increasing situational awareness</td>
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<tr>
<td>Environment</td>
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Four Cornerstones

These are the supporting bases of a strong safety culture in health care, according to system safety expert David Marx. These cornerstones are outlined in a pamphlet distributed to health care providers by Marx’s company, Outcome Engenuity, which has been disseminating the Just Culture message for more than 10 years. Here are Marx’s definitions of the four cornerstones:

1. Create a Learning Culture
In the case of patient safety, this is a culture that is eager to understand risk at both the individual and organizational levels. We can see risk through events and near misses. We can see risk by observing the design of the systems in which we work, as well as in our behaviors and the behaviors of those around us. We must all be willing to learn from our mistakes and to share this learning in a manner that supports system design and continued safe choices.

2. Create an Open and Fair Culture
Organizations must move away from an overly punitive reaction to events and errors. We must ask the erring provider to report the event so that others may not be denied the learning opportunity. That being said, a strong safety culture is one that reinforces accountability for safety across all levels of the organization, from CEO to staff. It is a system of accountability that does not focus on the human error or the unintended consequences but rather focuses on the quality of our decisions.

3. Design Safe Systems
It is the system in which we work that has the greatest overall influence on the safety of the patient. We must design health care delivery systems that anticipate human error, capture errors before they become critical, and permit recovery when errors do reach the patient.

4. Manage Behavioral Choices
While we must anticipate that we as humans will make mistakes, it is our management of behavioral choices that will allow us to achieve the safety outcomes we desire. A strong safety culture puts a premium on critical decision-making skills and asks every health care provider to continuously evaluate the risks inherent in the choices they make.

Goals for a Just Culture

The Just Culture model sets goals for an organization, including the following:

- Creating an environment of internal transparency around risk
- Striving to understand why human errors occur within the organization
- Striving to understand why at-risk behaviors occur within the organization
- Learning to see common threads—to prioritize risk and interventions
- Working with staff to design systems that reduce the rate of human error and at-risk behavior or mitigate their effects
- Learning when to console and when to coach employees
- Limiting the use of warnings and punitive actions to the narrow circumstances where such use benefits organizational safety
- Avoiding traditional organizational biases by focusing on the risks inherent in systems and behavioral choices, not the actual outcomes of events
- Using data to build both unit and organizational models of risk
- Learning to measure risk, at both the unit and organizational levels


Consider two pieces of information presented to congressional hearings concerning the state of patient safety in this country:

- The Joint Commission identified lapses in teamwork and communication as a root cause in almost 70 percent of sentinel events.1
- Adverse events during hospitalization affect nearly one out of 10 patients. A substantial part of these events are preventable. Since a large proportion of the in-hospital events are operation- or drug-related, interventions aimed at preventing these events have the potential to make a substantial difference.2

Confronted with these somber figures, lawmakers have responded by appropriating funds and seeking expert assistance to find ways to reduce medical errors.

The Department of Health and Human Services acted by tapping its Agency for Healthcare Research and Quality (AHRQ) to explore solutions. AHRQ, in turn, identified a program called TeamSTEPPS® as a possible answer.3 TeamSTEPPS is the acronym for Team Strategies and Tools to Enhance Performance and Patient Safety. It is a teamwork system designed to improve the quality, safety, and efficiency of health care with effective medical teams that make optimal use of information, people, and resources to achieve best clinical outcomes for patients.

This program’s model had been developed by the Department of Defense (DoD) Patient Safety Program (PSP) and AHRQ during years of collaborative research into the application of teamwork principles within high-reliability organizations.4 The initiative is based on evidence derived from team performance—leveraging more than 30 years of research in military, aviation, nuclear power, business, and industry—to acquire team competencies.5

Focusing on improved communication and other crucial teamwork skills among health care professionals, TeamSTEPPS can be implemented in a wide variety of situations. Based on training that originated with the military and with aviation crews—highly skilled personnel functioning under intense pressure—TeamSTEPPS has been shaped for medical environments requiring similar high-stress teamwork performance with little margin for error. Thus, the program’s teamwork processes were tested under combat and aviation conditions—and subsequently have also been shown to reduce medical errors among health care providers.6

**Background**

Health care teamwork came into focus during the 1990s with the work of David Gaba and colleagues, who developed Anesthesia Crisis Resource Management (ACRM).7 This tool helped anesthesiologists manage crises by working in multidisciplinary teams, including physicians, nurses, technicians, and other medical professionals. Along with ACRM, training was provided in specific technical skills and generic teamwork skills, using patient simulators adapted from research with aviation teams. The program emphasized leadership, teamwork, communication, and resource management. Investigation into teamwork involving other disciplines—such as the operating room, emergency room, intensive care unit, and labor and delivery—had been done since the 1990s as well. It took AHRQ and DoD to combine efforts to provide an evidence-based program, wholly owned and funded by the federal government, to initiate wide-scale dissemination of a training curriculum into health care.8 As a result, the TeamSTEPPS approach to communication is applied today in varying stages throughout major academic medical centers and large integrated delivery networks across the country. Its implementation can support dynamic change, improved patient safety and quality, enhanced clinical and performance outcomes, reduced errors, increased provider satisfaction, and lower liability risk.

**Sharing Knowledge**

TeamSTEPPS was initiated in January 2003, when AHRQ and DoD convened a national panel of experts on human factors, human error, and medical team training. With its public release of TeamSTEPPS, AHRQ identified the program as the nationwide gold standard for team training in health care. Notable support came from the DoD Healthcare Team Coordination Program (HCTCP) cadre of master trainers, who have been involved with instruction since 2005.9 Effective delivery required the establishment of a national infrastructure for long-term sustainment through collaborative efforts of various federal agencies, academic centers, and health care networks, all aiming to spread the word. With
the support of the DoD, TeamSTEPPS was initially introduced at some 68 medical training facilities. Within these facilities, more than 1,500 trainers and coaches became fully versed in delivering TeamSTEPPS and introducing teamwork principles into practice. Today, the core of the national implementation is accomplished through six regional training centers:

- North Shore Long Island Jewish Health System, New Hyde Park, NY
- Duke Medical Center, Durham, NC
- Tulane University, New Orleans, LA
- University of Minnesota Fairview Medical Center, Minneapolis, MN
- Presbyterian St. Luke’s Medical Center, Denver, CO
- University of Washington Medicine, Seattle, WA

Teamwork and Health Care

The delivery of care requires teamwork among health care professionals, but members of these teams are rarely trained together and usually come from separate disciplines and diverse educational programs.10 Moreover, even though health care professionals may coordinate their activities to make patient care safe and efficient, function in specific roles, and share the common goals of patient safety and quality, simply conducting training or installing a team structure for all of the participants does not ensure that the team will operate effectively.

Why? Because teamwork is not solely a consequence of locating individuals in the same place.11 Rather, it depends on a willingness to cooperate, coordinate, and communicate while remaining focused on a shared goal of achieving optimal outcomes for patients. Teamwork does not require that members work together on a permanent basis; it is, however, sustained by a commitment to shared team knowledge, skills, and attitudes (KSAs).12 AHRQ and DoD took academically oriented information and adapted it to a framework that made sense from an instructional standpoint. Consequently, teamwork competencies are now expressed as KSAs—the underpinnings for the TeamSTEPPS instructional model.13

Nuts, Bolts, and Models

In the TeamSTEPPS model, teamwork is composed of the following KSAs: backup behavior, adaptability, team/collective orientation, shared mental models, mutual trust, and closed-loop communication (see back cover).14 The resulting TeamSTEPPS instructional framework stems from the educational modules presented in Figure 1. There, the core competencies/skills of leadership, situation monitoring (mutual performance monitoring), mutual support (backup behavior), and communication are encircled by the patient care team. Performance, knowledge, and attitudinal outcomes support the corners, resulting from proficiency in the central skills or core competencies. The curriculum includes consideration of barriers to performance, specific tools and strategies for effective teamwork and communication, and outcomes that result from the practice of TeamSTEPPS.

Delivery

Implementation is a multiphase process based on John Kotter’s version...
What Is TeamSTEPPS? What Impact Does It Have on Patient Safety and Quality?

continued from page 15

of organizational change:15

● Set the stage: Create a sense of urgency; pull together the guiding team.

● Decide what to do: Develop the change vision and strategy.

● Make it happen: Communicate for understanding and buy-in; empower others to act; produce short-term wins; don’t let up.

● Make it stick: Create a new culture.

The process is ultimately carried out by a host of trainer/coaches who champion the effort within their units, departments, or institutions. A successful TeamSTEPPS initiative requires a carefully developed implementation and sustainment plan.

Current information supports the efficacy of TeamSTEPPS, and preliminary data empirically confirm that: Team training has produced sustained improvement in OR team function, including decreased delays and improved case scores;16 team training was associated with lower surgical mortality17 and decreased surgical morbidity.18

It is generally accepted that practice and skills reinforcement are necessary to ensure sustainment and optimization of TeamSTEPPS. (Read about the TeamStepps journey at our hospitals in “Creating the TeamSTEPPS Improvements.”) Practice in this setting is most effective when a realistic treatment situation is reenacted to provide opportunities for learning and skills reinforcement. This may suggest a need for simulation in the sustainment phase, to create realism without jeopardizing the safety and security of real patients. The use of simulation has shown itself to be a powerful strategy in team-based health care. It affords excellent opportunities to enhance the quality of continuing education for health care professionals, while providing education and practice for students aspiring to join the health care field.

The variable impact of TeamSTEPPS tools and strategies on team-training programs must be continually investigated in the workplace—to identify and refine the best tools and strategies for reducing medical error. There is no doubt that health care teams are committed to achieving a culture of safety. The overall system continues to be refined and improved by combining the right behaviors and a common language along with the requisite clinical skills.

RESOURCES:
1 http://www.jointcommission.org/Sentinel_Event_Statistics/.
6 King et al., note 4.
9 King et al., note 4.
13 King et al., note 4.
14 Ibid.

Teamwork Competencies, Skills, and Related Tools

<table>
<thead>
<tr>
<th>TEAMWORK COMPETENCIES</th>
<th>BEHAVIORS AND SKILLS</th>
<th>TOOLS AND STRATEGIES*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership</strong></td>
<td>Clarify team member roles; provide performance expectations; engage in team events (e.g., brief, huddle, debrief); facilitate team problem solving</td>
<td>• Resource management • Delegation • Brief • Huddle • Debrief</td>
</tr>
<tr>
<td><strong>Situation Monitoring</strong></td>
<td>Anticipate and predict each other’s needs through cross monitoring; the actions of fellow team members; provide feedback early, which allows team members to self-correct; establish a safety net; watch each other’s backs.</td>
<td>• Situation awareness • Cross monitoring • STEP • I’M SAFE</td>
</tr>
<tr>
<td><strong>Mutual Support</strong></td>
<td>Correct deficiencies in workload distribution through shifting of responsibilities to underutilized team members; give and receive constructive and evaluative feedback; resolve conflict, advocate, and assert.</td>
<td>• Task assistance • Feedback • Advocacy and assertion • Two-challenge rule • CLS • DESC script • Collaboration</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>Communicate critical information through structured communication techniques; ensure information conveyed is understood through follow-up and acknowledgment.</td>
<td>• SBAR • Call-out • Check-back • Handoff • I PASS the BATON</td>
</tr>
</tbody>
</table>

* For definitions, see sidebar on page 19

The Three Phases of TeamSTEPPS® Implementation

Phase I: Assessment—Set the Stage

The goal of Phase I is to determine organizational readiness for undertaking a TeamSTEPPS initiative. The institution or work unit identifies leaders and key champions who will make up the organization-level change team—whose role is to identify specific opportunities for improvement that can be realized with a teamwork initiative.

A site assessment or training-needs analysis is conducted to determine the readiness of the institution to include support of leadership; potential barriers to implementing change; and whether resources are in place to successfully support and sustain the initiative. The assembling of information enables leaders to judge a variety of organizational factors that can affect patient safety; using facility-specific data (e.g., root cause analyses, occurrence reporting, and patient and staff satisfaction questionnaires) may give further support to the cause.

The organization-level change team will determine the departments where the initiative will be deployed, train the staff or other trainers, serve as the champions responsible for ongoing coaching and reinforcement of team behaviors and skills, and include feedback on the successful use of tools and strategies.

Phase II: Planning, Training and Implementation—Decide What to Do and Make It Happen

This is the planning and execution segment of the TeamSTEPPS initiative. The change team (or designees) participate in intensive TeamSTEPPS train-the-trainer sessions developed by AHRQ to support training in the core TeamSTEPPS curriculum—which includes scenarios, case studies, multimedia, and simulation. The training provides culture-change and coaching workshops that include skills and strategies necessary for implementation, sustainment, and spread of the initiative.

The champions for TeamSTEPPS produce an implementation and action plan in this phase. This is customized to each unit or department and includes a report detailing exactly how the initiative will be executed for each unit’s unique circumstances. As long as the primary learning objectives are maintained, TeamSTEPPS materials remain adaptable.

Phase III: Sustainment—Make It Stick

The essential aims are to sustain and expand improvements in teamwork behavior and in associated clinical processes and outcomes. The goals of Phase III are:

- Integrate teamwork skills and tools into daily practice.
- Monitor and measure the ongoing effectiveness of TeamSTEPPS.
- Develop an approach for continuous improvement and expansion of the intervention throughout the organization.

Sustainment is managed by the change team through coaching and active observation of team performance. It involves continuing core-curriculum training through refresher courses and newcomers’ orientation, conducting ongoing evaluations of teams throughout the organization, and providing meaningful, continuing feedback to staff members where day-to-day health care is provided. Specific objectives are based on the ability to integrate learned behaviors and tools into daily practice; measure their effectiveness; identify opportunities for continuous improvement; and spread positive change throughout the organization.

Creating the TeamSTEPPS Improvements

THE MOUNT SINAI MEDICAL CENTER: Building on the Culture

In 2008, Raymond Sandler, MD, Mount Sinai’s Director of Labor and Delivery, and Loraine O’Neill, RN, MPH, Director of Quality Initiatives for the Department of Obstetrics, Gynecology, and Reproductive Science, joined an interdisciplinary group attending the Duke University training program in TeamSTEPPS—an evidence-based system designed to improve communication and teamwork skills among health care professionals. The curriculum is rich in team-building tools, highly customizable, and well supported by extensive industry research.

Now, both Dr. Sandler and Ms. O’Neill are TeamSTEPPS Master Trainers and champions at Mount Sinai designated to train others in TeamSTEPPS and disseminate its principles and methodologies, while sustaining change within the organization. “It’s an extremely valuable program with effective tools and principles,” Dr. Sandler said of TeamSTEPPS. “It has become the vanguard for team formation and team teaching in OB/GYN.”

According to Ms. O’Neill, the foundational pillars of TeamSTEPPS are now embedded within the culture on Mount Sinai’s labor and delivery floor. “These pillars include leadership, communication, situation monitoring, and mutual support,” she said. “TeamSTEPPS has provided teachable tools—a toolkit—supporting the foundational pillars that we have been able to customize to the needs of our organization. Our team approach focuses on patient safety in every aspect of medical care—again, supported by those pillars.”

One example of a TeamSTEPPS communication tool used by the OB team, said Dr. Sandler, is SBAR, which stands for Situation, Background, Assessment, and Recommendations to address the circumstances at hand. Using this tool allows for an orderly discussion of difficult issues, and leads to the mutual support compact that typifies the teamwork process. In a health care environment, one team member’s work overload may produce fatal consequences. But TeamSTEPPS mutual support provides a safety net to help prevent errors, increase effectiveness, and minimize the strain causing that overload. Thus, mutual support, or backup behavior, enhanced by leadership enables teams to function effectively. Mutual support requires that team members must fully understand what others do, and be willing to provide and seek assistance when needed.

“TeamSTEPPS suggests that, over time, continuous mutual support will foster team adaptability, respect, and team orientation. We see increasingly strong signs of this in OB,” said Ms. O’Neill. Dr. Sandler concurred: “We want to teach people to be situationally aware—to actively listen, close the loop, and check back with one another. A shared mental model can help with this.”

Dr. Sandler moved on to an additional TeamSTEPPS process, called the brief. “We plan, or brief, before a procedure, and if we need to make any changes, we huddle and rearrange the brief. Once we’ve accomplished our procedure, we then go over what we did right and/or wrong by using a debrief,” he said. “Briefs, huddles, and debriefs—these are all essential elements to the framework of our team functions.”

Another TeamSTEPPS tool outlined was CUS. This gives team members ways to express that they are Concerned, or Uncomfortable, or that they perceive a Safety issue at hand. Using CUS, team members can alert one another with language that does not alarm patients or families—such as saying, “I need clarity”—suggesting that what is going on needs to stop, while the team huddles on the issue.

DESC is the TeamSTEPPS tool used by OB teams for conflict resolution. It has proved most effective in resolving personal conflict. The DESC script includes: Describe (the event); Express the circumstances; Suggest alternatives to prevent future such events; and Consider consequences and reach compromise or consensus to solve the issues.

Both Ms. O’Neill and Dr. Sandler stressed that leadership support is paramount to the success of TeamSTEPPS. “We have enjoyed the support of the department head, who has allocated resources to make TeamSTEPPS practices stick by making patient safety and risk-reduction high priorities,” said Ms. O’Neill. Dr. Sandler added, “Buy-in from leadership permits the staff to embrace these changes as common practice.” Continuing, they emphasized that hands-on leaders play a role in sustaining TeamSTEPPS—because they are responsible for routinely emphasizing the skills gained in training and for providing a role model in using the tools. The goal is for leaders to engage in activities that will ensure continuous involvement in teamwork, they said. “We develop drills, standardization, checklists, and the use of a simulation mannequin prior to practicing with greater ease and safety in the delivery room,” Dr. Sandler pointed out.

“With the support of Dr. Michael Brodman, Department Chair of Obstetrics, Gynecology and Reproductive Services,” Dr. Sandler said, “our goal is to bring about a common language and team practices, including the use of checklists, simulation, and practiced skills, starting
in labor and delivery, but then expanding beyond. Additionally, leadership in the context of conducting procedures requires a specific set of communication skills essential to success, including situation monitoring and mutual support communication,” he explained.

But this does not mean that other team members don’t have a voice, he said. For example, with an emerging issue of patient safety, Dr. Sandler said, “The chain of command and hierarchical structure of our institutions may imply an inhibition to report concerns. And this was, in fact, an identified issue specifically addressed by TeamSTEPPS,” he continued. “Not a day goes by now that a nurse doesn’t feel empowered to advocate for a patient’s safety and escalate an issue—with confidence that the concern will be heard.”

It takes vigilance to sustain positive cultural changes and identify opportunities for the further improvements that TeamSTEPPS can produce. “All that is gained from the TeamSTEPPS process is sustainable only with day-to-day reinforcement,” said Dr. Sandler. “It’s the only way to keep the TeamSTEPPS processes top-of-mind and the patient-safety changes intact. We maintain constant surveillance, observation, and reporting. We sustain TeamSTEPPS gains by observing team performance and maintaining a strong presence in the communication rounds. We keep a focus on coaching, feedback, and practice,” he remarked.

Beyond daily real-life procedures that provide a standardized practice framework—and refresher run-throughs for events such as labor hemorrhages, electronic fetal tracings, and shoulder dystocia—Mount Sinai’s OB floor currently conducts periodic team “fire drills.” These include training for communication, leadership, situation monitoring, and mutual support. Mount Sinai’s mandatory training in electronic fetal tracing, for example, puts everyone on the same page, Dr. Sandler pointed out. Speaking the same language, while providing team standardization and effective communication, is what TeamSTEPPS encourages.

“Going forward, it’s our hope to increase the number of interdisciplinary, hands-on drills to every six weeks,” Dr. Sandler added. “I believe that on-site drills are more practical and realistic than those conducted off-site. We acknowledge that ‘to err is human,’ and that no one comes to work wanting to make mistakes. We factor this belief into designing our quality and communication systems. We do not focus on blaming individuals, but rather seek to learn from events and address them productively.”

Dr. Sandler and Ms. O’Neill wear “second hats” as quality officers who review adverse events as documented in the Medical Event Reporting System (MERS) to seek out areas for learning and improvement. These might include uterine rupture, hemorrhage requiring transfusion, a full-term infant’s being admitted to the neonatal intensive care unit (NICU), or low Apgar scores. The quality officers do an investigation—including root-cause analysis—leading to a corrective action plan that may influence standards for the OB teams. Both Mount Sinai officials also strongly advocate for the use of coaching and feedback tools to address events.

Outcomes and Results after Implementing TeamSTEPPS

Measuring success is important to the TeamSTEPPS process. “Surveys indicate a perception of enhanced teamwork and communication among continued on page 20
Creating the TeamSTEPPS Improvements
continued from page 19

the obstetrics staff. And, anecdotally, we believe that communication has improved on our teams," said Ms. O’Neill. "This has reduced the need for assisted deliveries, and has led to fewer blood transfusions for postpartum hemorrhages, fewer dystocia-related injuries, fewer forceps and vacuum extractions, and measurable improvement in documentation of adverse obstetric events—a critical consideration in any legal matter."

With input from the OB chair, Ms. O’Neill said, care guidelines have been developed with a focus on appropriate documentation and on quality of care.

Dr. Sandler explained the purpose of Mount Sinai’s concentrated effort with a simple comment: “We want healthy babies and healthy moms, with the overarching goal of patient safety.

“With TeamSTEPPS tools helping us to maintain the critical pillars of leadership, communication, situat monitoring, and mutual support communication, we have every opportunity for continued positive outcomes,” Dr. Sandler forecast. “Ongoing coaching and teamwork sessions that focus on communication, lowered barriers, and reduced hierarchy will all help us concentrate on patient safety, as intended.”

According to Ms. O’Neill, sustaining the TeamSTEPPS program calls for celebrating its wins and updating its processes to maintain positive outcomes. "There’s currently an effort to incorporate TeamSTEPPS in the peri-op group. The TeamSTEPPS toolbox offers endless possibilities here for team-building and for improving patient safety throughout the organization,” she added. "In a highly reliable organization like the labor floor, our experts are the scrub techs, doctors, residents, nurses, and midwives,” observed Dr. Sandler. “Using TeamSTEPPS, we want to turn our experts into our expert teams—and keep them that way.”

MAIMONIDES MEDICAL CENTER: Impacts on OB, Neonatal Intensive Care, and Pediatrics

A leading TeamSTEPPS facilitator at Maimonides Medical Center is Lora Dibner-Garcia, RN, Perinatal Patient Safety Officer, who is spearheading education and planning efforts in the OB/GYN unit. “We are the first unit at Maimonides to launch TeamSTEPPS and are currently educating our front-line team with a four-hour Fundamentals Course, and have just reached over 50 percent of our staff,” Ms. Dibner-Garcia reported. The TeamSTEPPS Fundamentals Course elaborates the central principles and concepts of TeamSTEPPS—team structure, leadership, situation monitoring, mutual support, and communication—while a summary pulls everything together.

“Our short-term goal,” Ms. Dibner-Garcia explained, “is to educate. The next is to mentor the use of TeamSTEPPS on the floor. The long-term goal is culture change. Adding the Essentials Course for non-direct patient-care staff will help team members feel engaged.”

As the TeamSTEPPS educational experience grows, Ms. Dibner-Garcia added, “a natural extension is to incorporate TeamSTEPPS into simulation. We look forward to working with Dr. Brian Gillett as TeamSTEPPS competencies are embedded into all of the simulation programs that have been designed here at Maimonides.” Dr. Gillett is Simulation Director at the Maimonides Center for Clinical Simulation, as well as an attending physician in emergency medicine. “Team-based care, like any learned skill, involves mastery of its individual components,” Dr. Gillett explained. “In the case of teamwork, these components are largely oriented around skilled communications,” he added, noting that communications skills are nurtured by working in simulation settings.

“The simulation paradigm provides a zero-fault environment where all staff can practice the TeamSTEPPS principles,” he said—adding that in this environment, team-based care skills can be measured and identification can be made of curricula that need customizing in support of positive outcomes.

According to Ms. Dibner-Garcia, her unit will form two guiding Action Committees, which their team of Master Trainers—including nurses, physicians, physician assistants, and midwives—will support in the use of TeamSTEPPS tools in their day-to-day work. “We’ve displayed posters, sent e-mail updates, and given out stickers to keep the conversation and enthusiasm going,” she added. “People do grasp the importance and impact of team training. Making a change is difficult, but people are coming forward to help, wanting to be a part of a larger patient-safety effort.”

In the meantime, she said, “We’ve displayed posters to communicate about TeamSTEPPS at Maimonides in an effort to build enthusiasm. The staff have responded well. They were excited to hear about the team training and our efforts to implement this system. People are coming forward, wanting to help us introduce the new processes.”

Another leader of the TeamSTEPPS rollout at Maimonides is Kelly Reilly, MSN, RN-BC, Director of Nursing Simulation and Assistant Director of Nursing Professional Development. No stranger to the value of TeamSTEPPS, she gained her national Master Trainer designation in the program in 2007, before working on the design and implementation of another large-scale education initiative. “We’re in the planning stages for rollout in the neonatal intensive care unit,” Ms. Reilly said, “and then for the entire pediatrics department. Along with the department’s senior leadership, we are actively discussing TeamSTEPPS in forums such as grand rounds and in-services.”

Ms. Reilly also is working closely with Dr. Gillett. “In the discipline of simulation,” she said, “all the OB and Pediatrics programs have TeamSTEPPS competencies embedded as learning objectives.”

Observing Changes

Ms. Dibner-Garcia said that she has already observed the positive influence of TeamSTEPPS on the Maimonides OB labor and delivery floor. “I have seen staff encouraged to face issues themselves, moving with a team mentality rather than an individual focus (what’s right, not who’s right).” She continued, “I also see staff members incorporating tools such as SBAR and Call-Out into clinical practice and simulation events.”
Another positive indicator was noted by Ms. Reilly: “We have noticed more ‘we’ versus ‘I’ statements, which suggest a difference in how staff are relating with each other.” She continued, “Some of the most effective tools of TeamSTEPPS are related to situational awareness and mutual support. It can make a big difference in getting through a rough experience when the team is aware of its members’ needs, and assistance is requested or offered.”

“Likewise,” Ms. Reilly added, “communication and leadership can become effective tools for ensuring the safety and quality of the care we deliver.”

Ms. Dibner-Garcia pointed out that performance measurement is a critical feature of judging the impact of the training. “Going forward, we are collecting data to examine and compare the impact of the work and training we are committed to,” she stressed. Concurring, Ms. Reilly said, “After TeamSTEPPS implementation, we will be looking at specific projects from the perspective of the Plan-Do-Check-Act cycle. We want to create a measurement at the unit/department level for tracking and displaying improvements.”

MONTEFIORE MEDICAL CENTER:
New Steps in a Safe Direction for OB and OR

Two key physicians committed to patient safety and quality at Montefiore Medical Center are joint stakeholders in the success of TeamSTEPPS, and share high expectations for its long-term success in both OB and OR.

One is Peter Bernstein, MD, Professor of Obstetrics and Gynecology and Women’s Health, Montefiore Medical Center/Albert Einstein College of Medicine, and Director of Perinatal Network Development and Quality. The other is Jason Adelman, MD, who serves as Patient Safety Officer and Chair of the Surgical Safety Committee, and is Associate Clinical Professor of Medicine, Albert Einstein College of Medicine. These colleagues give two thumbs up to the progress to date in advancing TeamSTEPPS in both OB and OR departments at Montefiore medical campuses.

OB Department: The First Stop

Pointing out that the OB department at Montefiore began TeamSTEPPS training only 18 months ago, Dr. Bernstein said, “We are about halfway to producing real culture changes.” And, he quickly added, “we will stay the course to maximize the full effect of the processes we have put in place.”

Dr. Bernstein said that, by augmenting patient safety courses, “we are currently reaching more staff with TeamSTEPPS communication concepts,” adding, “we are committed to ongoing reinforcement that allows people to be more comfortable and to use these tools more efficiently.”

He stressed leadership’s dedication to the success of TeamSTEPPS. “It’s a gradual process, and we know we would not have been this successful without our hospital leadership’s dedication to the program,” Dr. Bernstein said. Making the TeamSTEPPS concepts part of the mandatory training curriculum at Montefiore, he continued, was an important commitment that showed the medical community the value of the program. “We have a way to go, but we are starting to see better and stronger communications among all levels of staff on the labor and delivery floor,” said Dr. Bernstein.

There is a clear link between TeamSTEPPS and all other safety initiatives currently in play at Montefiore, according to Dr. Bernstein. “We have several safety efforts under way—simulation training, EMRs, and initiatives around attending supervision and documentation,” Dr. Bernstein continued, “All our efforts have translated into a reduction in adverse outcomes, as measured by the Adverse Outcomes Index, and we will continue monitoring and assessing all our initiatives in order to effect positive results and continuous improvement.”

OR TeamSTEPPS: Training the Champions

TeamSTEPPS is in its infancy at the surgical departments of Montefiore Medical Center. Earlier this year, more than 50 key staff—nurses, clinicians, physicians, and members of other disciplines—were trained in the core concepts of TeamSTEPPS. As a result, these individuals were named Master Champions. “They now are ongoing contributors to training development, helping support the effort, encouraging others, and maintaining energy at the individual institutions,” said Dr. Adelman.

“With our goal of implementing TeamSTEPPS in all 50 operating rooms across all Montefiore campuses, we need these interdisciplinary teams—surgeons, anesthesiologists, nurses, and administrative staff—to commit themselves to the TeamSTEPPS tools and processes.”

“Our Master Champions will roll out the training curriculum to all OR staff beginning this autumn,” Dr. Adelman noted, “introducing an individual new aspect or skill on the second Monday of each month.” He continued, “The educators then will meet monthly in collaboration with members of Chief Learning Officer Helen Slaven’s team, which administers the Montefiore Learning Network.” Through this process, the TeamSTEPPS advocates will help refine, polish, and customize the content continued on page 22
Creating the TeamSTEPPS Improvements
continued from page 21

as training progresses, to ensure its relevance. “The Learning Network plays an ongoing education role that enhances patient safety and welfare. We could not do this without their support and the support of our entire administration,” said Dr. Adelman.

“Another key to development of the TeamSTEPPS initiative is the support of the Chief of the Division of General Surgery, Dr. Peter Shamamian,” explained Dr. Adelman. “Subject matter experts such as Dr. Shamamian introduce critical applicability to our specific culture,” he said, noting that Dr. Shamamian also serves as a professor of surgery at Albert Einstein College of Medicine.

Dr. Adelman also pointed out that Montefiore has openly adopted all parts of the FOJP surgical initiative strategies when addressing patient safety. To date, these include the following (and will be elaborated upon in future issues of infocus):

- Pre-op assessment, in which the surgeon becomes thoroughly familiar with the patient’s condition before the procedure
- TeamSTEPPS processes for communication during the procedure
- Co-managed care by the surgeon and physician following the surgical procedure, to address any issues
- Specific strategies to address the care of obese patients, who have higher complication rates

BETH ISRAEL MEDICAL CENTER: At the Beginning

For TeamSTEPPS, training for Beth Israel’s OB department began this spring, when more than 250 staff members gained initial exposure. Adam P. Buckley, MD, FACOG, Associate Chair for Quality and Patient Safety and Assistant Program Director in the Department of OB/GYN, is among the leaders qualified to champion TeamSTEPPS at Beth Israel.

The rollout was considered rapid, and relied on uniform curriculum and messaging intended to quickly influence team behaviors. “Everybody in mother-child health was involved in the training, including department representatives from NICU, Pediatrics, OB, and clinical representatives such as midwives, residents, nurses, patient services assistants, unit clerks, and OR techs,” said Dr. Buckley.

“This is a relatively new initiative for our staff, and a departure from our existing culture, so it will take time to integrate it into our usual way of doing things,” he said, adding, “The four-hour TeamSTEPPS training sessions, along with the small-group discussions in breakout sessions, were grounded in personal experiences. That critical element provided a chance for the teams to see the impact of TeamSTEPPS concepts, and appreciate their value to our units.”

In the coming months, Beth Israel will conduct training sessions on an array of concepts from the TeamSTEPPS toolbox to reinforce the nature of teams and teamwork:

- Clarity
- Mutual support
- Feedback
- Leadership, including briefs, huddles, and debriefs
- Communication (SBAR)
- Situational awareness

“We’re also engaging faculty to involve the entire learning curriculum,” Dr. Buckley said. “We will customize the initiative to gain the greatest value for our institution.” In addition, he said, “communication posters will support and reinforce broad concepts, while champions will host group sessions to emphasize and practice the lessons learned.

“We intend to address conflict resolution with separate training,” said Dr. Buckley, noting that this instruction will be interdisciplinary in nature—including nurses, residents, and attending physicians—so that the content will have a team context that resonates with team environments.

“Going forward, we will conduct monthly refresher meetings to review outcome-based ideas,” Dr. Buckley said. “Sustaining advantages gained from training is the most difficult part. We will be adding staff to help leadership maintain what has been achieved through the training. We think that keeping these concepts top-of-mind will reinforce positive behaviors.”

Six months into TeamSTEPPS, Dr. Buckley and Irene Scarlino, RN, MBA, a TeamSTEPPS champion and Nurse Manager at Beth Israel’s Labor and Delivery, will take a look at its progress. They will evaluate feedback from the staff, review the safety surveys and observe staff interaction, noting the impact of the teams on the culture. This will be compared to the baseline information they had when they started—all with an eye toward positive impacts with long-lasting implications.

Conclusion

Patient safety is a function not only of sophisticated health care technology and treatments, but also of the degree to which health care professionals perform effectively as teams. Evidence suggests that teamwork comprises four core skills: leadership, situation monitoring, mutual support, and communication. The goal of TeamSTEPPS is to produce highly effective medical teams that optimize the use of information, people, and resources to achieve the best clinical outcomes for the patients.

Implementation is one thing; sustainability is another. While some institutions are just beginning to implement the process, others are proving that once the changes are in place, accepted, and reinforced, they can be sustained. For a culture change to be successful over the long term, sustainability requires leadership commitment, investment of time and resources, and constant, focused improvement that can be measured and observed by all.

1 http://teamstepps.ahrq.gov/.
From the Chief Medical Officer

We experience at an early age that being part of a team can be incredibly effective. We achieve results, win the game, create unique friendships, and feel part of something larger. However, changes occur as we grow older. Although in the broadest sense we understand the extraordinary concepts and value of an effective team, we lose something in translation when we individually strive to perfect our skills, get the task done, be the best, or just try to achieve top recognition for a job well done.

Quality health care requires a team-oriented environment. Everyone contributes to the overall success—physicians, nurses, pharmacists, administration, patients. The bigger picture of safety and quality drives the actions; the function or role the individual plays serves the bigger picture. Today, organizations are starting to recognize that effective teamwork is very different from just building an effective team. Fostering teamwork is creating a work culture, a just culture, that values shared accountability, planning, decisions, actions, coaching and feedback—and therefore creating a model designed to not only respond to adverse events, but also to obsess about preventing them.

In this issue of infocus we shared a lot about what is happening to build a model of teamwork, supported by an evidence-based language and a series of defined processes. Building high-reliability organizations requires that teamwork become an essential component of a sustainable model for delivery of quality, safe care.

As part of the continued advancement in building the sustainable model, there are many ongoing committee activities at FOJP, particularly the committees exploring the use of simulation. Designated experts from each of the FOJP institutions are actively engaged in reviewing simulation-based curricula being used to measure, train, and assess a professional’s ability to integrate knowledge, clinical judgment, communication, and teamwork in practice settings.

The simulation committees are working to help standardize the types of simulation initiatives available, while allowing each hospital autonomy to develop programs according to needs and resources. The committees also share knowledge and strengths, and design best practices using existing simulation efforts in order to leverage them for the benefit of all our institutions. These are the current projects in review:

- Evaluate and select an endovascular simulator for each institution to be used by interventional radiologists, neurosurgeons, interventional cardiologists, and vascular surgeons.
- Implement an anesthesia simulation program required for credentialing and re-credentialing based on the Mount Sinai simulation program in Maintenance of Certification in Anesthesiology (MOCA®). The program emphasizes team training and communication; evaluation and management of the difficult airway; and recognition and treatment of ischemia and cardiac arrest. The program provides opportunities to manage rare and critical pulmonary and cardiovascular events in the simulated environment.
- Design, develop, and integrate perioperative TeamSTEPPS into simulation. Each hospital team will develop applicable scenarios and bring together an interdisciplinary team of surgeons, anesthesiologists, and nurses who will use surgical simulation in conjunction with TeamSTEPPS leadership and communication tools.

Training for patient safety and quality remains a critical objective for FOJP—as exemplified by our March 2012 conference described in this edition of infocus. Through our simulation committees and more than 20 other committees that you will hear more about in future editions, we are committed to ongoing efforts to promote cultural change, to inspire high-performance professionals to improve patient safety and quality, and to work together to accomplish complex, difficult tasks. Since evidence shows that favorable patient outcomes are dependent on effective interdisciplinary teamwork, we must remain vigilant in training effective teams to be experts in critical teamwork.

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Team KSAs and the Coordinating Mechanisms of Teamwork

KSA = Knowledge, Skills, and Attitudes

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<th>TEAMWORK</th>
<th>DEFINITION</th>
<th>BEHAVIORAL EXAMPLES</th>
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<td>Team leadership</td>
<td>Ability to direct and coordinate the activities of other team members, assess team performance, assign tasks, develop team KSAs, motivate team members, plan and organize, and establish a positive atmosphere.</td>
<td>• Facilitate team problem solving&lt;br&gt;• Provide performance expectations and acceptable interaction patterns&lt;br&gt;• Synchronize and combine individual team member contributions&lt;br&gt;• Seek and evaluate information that impacts team functioning&lt;br&gt;• Clarify team member roles&lt;br&gt;• Engage in preparatory meetings and feedback sessions with the team</td>
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<td>Mutual performance monitoring</td>
<td>The ability to develop common understandings of the team environment and apply appropriate task strategies in order to accurately monitor teammate performance.</td>
<td>• Identify mistakes and lapses in other team members’ actions&lt;br&gt;• Provide feedback regarding team member actions in order to facilitate self-correction</td>
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<td>Backup behavior</td>
<td>Ability to anticipate other team members’ needs through accurate knowledge about their responsibilities. The ability to shift workload among members to achieve balance during periods of high workload or pressure.</td>
<td>• Recognition by potential back-up providers that there is a workload distribution problem in their team&lt;br&gt;• Shifting of work responsibilities to under-utilized team members&lt;br&gt;• Completion of the whole task or parts of tasks by other team members</td>
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<td>Adaptability</td>
<td>Ability to adjust strategies based on information gathered from the environment through the use of compensatory behavior and reallocation of intra-team resources. Altering a course of action or team repertoire in response to changing conditions (internal or external).</td>
<td>• Identify cues that a change has occurred, assign meaning to that change, and develop a new plan to deal with the changes&lt;br&gt;• Identify opportunities for improvement and innovation for habitual or routine practices&lt;br&gt;• Remain vigilant to changes in the internal and external environment of the team</td>
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<td>Team/collective orientation</td>
<td>Propensity to take other’s behavior into account during group interaction and belief in the importance of the team’s goals over individual member’s goals.</td>
<td>• Taking into account alternative solutions provided by teammates and appraising that input to determine what is most correct&lt;br&gt;• Increased task involvement, information sharing, strategizing, and participatory goal setting</td>
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<td>Shared mental models</td>
<td>An organizing knowledge structure of the relationships between the task the team is engaged in and how the team members will interact.</td>
<td>• Anticipating and predicting each other’s needs&lt;br&gt;• Identifying changes in the team, task, or teammates and implicitly adjusting strategies as needed</td>
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<td>Mutual trust</td>
<td>The shared belief that team members will perform their roles and protect the interests of their teammates.</td>
<td>• Information sharing&lt;br&gt;• Willingness to admit mistakes and accept feedback</td>
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<td>Closed-loop communication</td>
<td>The exchange of information between a sender and a receiver, regardless of the medium.</td>
<td>• Following up with team members to ensure message was received&lt;br&gt;• Acknowledging that a message was received&lt;br&gt;• Clarifying with the sender of the message that the message received is the same as the intended message sent</td>
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