

Teaching Teamwork and Its Impact on Patient Care

Speaker

Robert McQuillan, MD

Chair of the Department of Anesthesiology, Creighton University School of Medicine

Ultra-safe, “high reliability organizations” – such as scheduled airlines, nuclear power plants, European railroads, and aircraft carriers – have markedly lower error rates than hospitals. In fact, hospitals have error rates comparable with activities such as bungee jumping, extreme mountain climbing, and motorcycle racing, where individuals reign. One of the lessons to be learned from high reliability organizations is their use of teamwork. Teamwork is not some warm and fuzzy concept. It’s about science, about understanding the human factors that people bring to the table when they have to perform in a very complicated environment.

Teamwork is something more than just the individual accomplishments of each member of the team. So-so players can come together and produced stunning upsets, such as the U.S. hockey team in the 1980 Olympics. This group of amateur and collegiate players went on to beat the U.S.S.R. team and win the gold medal. On the other hand, one can have a collection of very talented guys, such as the U.S. men’s basketball team at the 2004 Olympics. This very promising team, full of NBA players, lost to the Lithuanian team four years ago and ended up with the bronze medal.

Teamwork is not the answer to everything, though. It’s a part of a complicated process that includes aligning multiple types of complicated processes; a supportive organizational context; and the human attributes of knowledge, skills, and attitudes. This conversation is to provoke everyone to think about what kind of changes need to occur in medical education and across the health care system to achieve new levels of performance and move the profession to the higher-reliability processes. James Reason, PhD, a scholar on human error at the University of Manchester in England, put it this way: “We cannot change the human condition, but we can change the conditions under which humans work.”

Speaker

William Munier, MD

Director, Center for Quality Improvement and Patient Safety at the Agency for Healthcare Research and Quality

Teamwork was not the goal, said Dr. Munier, when he was a resident. He was trained under the “lobo/solo” philosophy of doing it on your own. He would like to believe things have changed, but he doesn’t think they’ve changed that much. Teamwork should take place throughout the continuum of medical education, starting in the preclinical years, and should be interdisciplinary, sharing curricula with nursing, pharmacy, and other allied professions.

To enhance teamwork and communications skills, the Agency for Healthcare Research and Quality (AHRQ) created in 2002 the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS™) program with the Defense Department. People at the Defense Department were far ahead of the medical profession, having researched teamwork for more than 20 years in many industries. For instance, they studied teamwork under stress. The TeamSTEPPS program that AHRQ created with the Defense Department is in the public domain and is free. The Web site allows anyone to sign up for training, download materials, and receive notification about program updates.

The program takes the concept of knowledge, attitude, and skills, which are individual concepts, and moves them to the team level, where there can be a shared mental model of mutual trust, team

orientation, and performance. All the attributes that apply to individuals – adaptability, accuracy, productivity, efficiency, and safety – are greatly enhanced and become characteristics of the team. For example, Beth Israel Deaconess Medical Center in Boston has successfully used the program. After introduction of the program, total adverse outcomes and number of severe cases were reduced, spending out of reserves fell, and the costs of nurse turnover fell.

Although AHRQ created TeamSTEPPS with the Defense Department, it was appreciated that health care is different and ideas from other industries shouldn't be forced on the medical profession. For instance, one cannot bring continuous quality improvement techniques, developed for assembly lines, into health care, where every case is unique. In addition, it had to be kept in mind that each health care organization operates differently. With this in mind, FLEXTRA was created, which helps customize the program to fit local circumstances. FLEXTRA helps an organization develop materials for in-service training and faculty development. The FLEXTRA kit includes CDs, modules, and DVDs and extensively uses cartoons, an effective way of quickly conveying abstract information.

During the start-up phase, teamwork needs to be part of education rather than just performance. Teamwork doesn't come easy even in motivated organizations. TeamSTEPPS provides a structured approach to overcome each hurdle, as identified by the Defense Department and AHRQ and documented in the literature. The hurdles include inconsistency of team membership, lack of time, lack of information, hierarchy, defensiveness, conventional thinking, complacency, varying communication styles, conflict, lack of coordination and follow-up with co-workers, distractions, fatigue, workload, misinterpretation of cues, and lack of role clarity. Tools and strategies include being brief, huddling, debriefing, cross-monitoring, and feedback. There is an "aha" moment when people realize that this approach really does work. Then commitment becomes infectious and moves across the organization. The outcomes include a shared mental model, adaptability, team orientation, mutual trust, team performance, and patient safety.

AHRQ is in the process of rolling this program out nationally. Team resource centers have been established. Employees in all quality improvement organizations (QIOs) are scheduled to be trained for TeamSTEPPS by this August. The QIOs will then be able to train hospital staffs. AHRQ is also creating technical assistance for user support networks in developing an evaluation plan to improve on the measures of success that was initially documented. There are four resource centers for the program, at the University of Minnesota, Duke University, Creighton University, and Carilion Clinic in Roanoke, VA. The lead QIOs in the project are in California and in the tri-state area of Delaware, Maryland, and Virginia. There are also contractors who provide logistics and evaluation.

New patient safety organizations (PSOs) have been established, which will collect, aggregate, and analyze confidential information reported by health care providers. PSOs are being set up by the Patient Safety and Quality Improvement Act of 2005, which AHRQ will administer by the end of the year. The deadline for the final regulations is November 1, 2008. Progress in quality and safety has been enormously hampered over the years by professionals' fears of having their deliberations on medical errors ending up in court. The new program sets up national uniform protections, both in terms of confidentiality and privileges. Malpractice lawyers will not be able to reach into quality and safety deliberations.

Unlike previous protections under state peer review laws, these Federal protections are national in scope and not limited to hospitals. They apply to nursing homes, doctors' offices, and integrated delivery systems, and they cross state lines. Any entity can become a PSO, except for insurance companies and components thereof as well as accrediting bodies. However, components of accrediting bodies can become PSOs. The law establishes common definitions and reporting formats. A few years ago, AHRQ began creating an inventory of reporting systems. It didn't go to individual

hospitals but did look at large systems, such as the hospital chains. That's the evidence base AHRQ is using to construct the formats.

AHRQ hopes that common definitions will be a major contribution to the advancement of knowledge about patient safety. Other than the Centers for Disease Control and Prevention's definition for health care-associated infections, very little is defined uniformly. Even patient falls are variously defined. This makes it impossible to aggregate information, define trends, and learn from each other. With these initiatives, there is an opportunity to use human intelligence in a structured approach that generally improves quality and safety and quickly responds to safety problems that occur on the spot.

Speaker

Karen Frush, MD

Chief Patient Safety Officer, Duke University Health System

Despite the profession's best efforts, patients are harmed. In 2003, Jesica Santillan, a 17-year-old with complex congenital heart disease, died at Duke University Hospital after she received a mismatched heart-lung transplant. Dr. Frush lived this upfront and personal as the Chief Medical Officer of Children's Services at the time. When a child dies of a medical error it is the greatest tragedy for the parents, family, and friends, and it is also devastating to the caregivers.

Since then, Duke has been doing everything it can to make sure this does not happen again. Duke set out to develop a comprehensive patient safety program. Patient safety champions now work in interdisciplinary teams on the units. Safety walk-arounds are conducted, asking frontline personnel to identify what could hurt somebody. Computerized surveillance systems identify risks in real time, such as in creatinine levels in blood tests. When sentinel events occur, a root cause analysis is performed. There is automated surveillance, computerized physician order entry, and bar coding for medication safety.

Focus on the people who provide the care is needed. Duke is moving away from a culture of blame, but not to a "blame-free" culture. Accountability is emphasized. While there can be defects in systems, individuals also make behavioral choices, and they have to be managed. Duke no longer wants a culture of individual experts. Yes, Duke has some great experts, such as the neurosurgeon who recently operated on Senator Kennedy. But in this complex, high-risk world of health care, no single person can provide safe, high-quality care to patients. It has to be done as a team.

Two years ago, Duke began using TeamSTEPPS™ to help introduce teamwork. It is evidence-based, comes in modules, and is very customizable. Particular tools and techniques can be applied to the situation. Issues in a certain unit can be identified and a program customized. For example, the program helped Duke get a handle on patient handoffs in the OR and the ICUs. There had been a couple of events where patients were harmed and the institution realized that there was poor communication among providers.

Part of the process involves changing the way individuals behave and communicate. For example, when a surgeon enters the OR and somebody starts to say something and he shoots back, "I need to concentrate," the message is that nobody should raise any questions. A very different tone would be set if he introduced himself and used everybody's name. Compare "Excuse me, scrub nurse" with "Excuse me, Joan." But changing behavior is hard work. Everybody thinks everybody else needs to change but themselves. Change is implemented through the coaching component of TeamSTEPPS, which uses four levels of evaluation: Do you like the training? Are you going to participate in it? Is it changing your knowledge? Does that lead to an attitude change? The fourth level is looking at outcomes. Since making changes in the pediatric ICU, Duke has had no catheter-associated bloodstream infections for the past six months. Central to those changes was a tool called situation

background assessment recommendation (SBAR), which structures a communication into a brief, quickly understandable message for more effective handoffs. When everyone has the same goal and is on the same page, infections can be reduced.

Rather than waiting to change the culture after physicians' finish training — and having to undo unwanted behaviors — it's important to begin this work in medical school. In 2005, Duke University School of Medicine and the University of North Carolina School of Medicine brought together their fourth-year medical students and nursing students to learn teamwork. A version of TeamSTEPPS for students was used, customized by the Defense Department and AHRQ. Using Web casts and some interactive experiences, the program involves a lecture, audience response, role play, and a high-fidelity simulation.

In the program, which was refined in the second year, students learned principles of teamwork online and then took part in a half-day of interactive exercises on 15 high fidelity simulators. First, students were organized into groups of eight. Two medical students and two nursing students were assigned roles in a clinical scenario where they were asked to focus on non-technical skills, such as communicating and teamwork behaviors. The other four students evaluated them; then they switched roles. Following that, all students watched vignettes where actors display teamwork behaviors and then scored what they saw.

The students were tested before and after training to gauge the effects. Results showed statistically significant improvements in knowledge and attitude. Scores rose from 9.37 to 10.38 for the lecture; from 9.16 to 10.62 for audience response; from 9.24 to 10.29 for role play; and from 9.11 to 10.63 for the high fidelity simulation. Note that there is no significant difference between the four methods of content delivery. Simulation was expected to produce more marked improvements and still may occur once the simulation exercises are redesigned. Also, students preferred simulation and other more interactive experiences. In the future, PA and pharmacy students may be included in the exercises.

Based on Duke's survey, it is believed that teamwork is something that can be graded and scored. Once the instruments are improved, the results can be used for licensure and board certification. Regulatory agencies, such as the Joint Commission, should identify teamwork as a priority. In fact, one of the newer national patient safety goals has identified communication as part of teamwork. Once Duke's medical students enter residency training, it is hoped they will continue to practice the teamwork skills they learned. They have been warned, though, that they might be disappointed working in a clinical area where teamwork is not practiced, but they can help be the change agents.