Making the Case for Quality

Department of Defense Tools Help Hospital Foster a Culture of Patient Safety

by Megan Schmidt

A lot can go wrong in hospitals—falls, infections associated with catheters, incorrect dosages of medicine administered to patients, wrong-patient surgeries, and more. “To Err is Human: Building a Safer Health System,” a pivotal Institute of Medicine report released in 1999 that is credited with raising awareness about U.S. medical errors, reported that between 44,000 and 98,000 Americans die each year as a result of preventable medical errors in inpatient settings.¹ Comparatively, in 1999, nearly 29,000 people were killed from gunfire and 41,000 died in traffic accidents.²

“To Err is Human’ was a watershed moment for the hospital,” said Maureen Frye, Abington Memorial Hospital’s director for the Center for Patient Safety and Healthcare Quality (CSQ). “Patient safety and quality became a personal mission and a movement for our visionary leadership.”

While keeping patients safe may seem like a given—after all, patients seek medical care for help, not harm—the reality is that doctors and nurses are humans, and humans make mistakes. However, the chances of errors occurring and their severity can be reduced. Frye said patient safety is at the core of everything the hospital does. “If you don’t get patient safety right, you don’t get anything else right. It comes down to being mindful of what can go wrong... and having the tools to protect ourselves and our team. As humans, we will make mistakes. We need strategies to handle our own ‘humanness.’”

Frye said the TeamSTEPPS™ program was instrumental in creating a culture of safety because it teaches collaboration and standardizes the way healthcare professionals talk to each other.

Abington Memorial Hospital staff gathers for a briefing in this screen saver image that appears on computers throughout the hospital. The purpose of the patient safety screen savers is to remind staff about the tools and strategies taught during the TeamSTEPPS™ training sessions.

Abington Memorial Hospital created a culture of patient safety and improved communication using the TeamSTEPPS™ program. Created by the Department of Defense and the Agency for Healthcare Research and Quality, TeamSTEPPS™ is a teamwork system based on 25 years of experience and lessons learned from high-reliability organizations. These organizations have conducted extensive research into how teams work, what makes them effective, and how to enhance individual and team performance.

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At a Glance . . .

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- The hospital reports that serious safety events have been reduced since the implementation of TeamSTEPPS™ behaviors.
“We’re interacting in complex worlds, where the art of face-to-face communication no longer exists,” Frye said. “We needed [tools] to help us to stop, think, and act.” She added, “The Joint Commission has found that almost 65% of medical errors can be attributed to ineffective communication.”

**About Abington Memorial Hospital**

A bington Memorial, a 665-bed, nonprofit teaching hospital in A bington, Pa. (a suburb of Philadelphia), handles nearly 42,000 inpatient admissions and more than 130,000 emergency patients at its level II trauma center each year. It has the second-busiest maternity center in the state, delivering over 5,000 babies every year. The hospital has 5,500 employees, 900 physicians, and 1,200 volunteers.

In 2010, the hospital received the Keystone Alliance for Performance Excellence (KAPE) Award, which was the first time in the seven-year history of KAPE that an applicant received its top-tier award.

**Recognizing the Benefit of Teamwork, Communication**

Abington Memorial formally began its journey toward stronger patient safety in 1999. In the mid-2000s, the hospital recognized the need to advance a safety culture and implement communication improvements as a way to reduce medical errors.

“Putting systems and processes in place can help reduce error, but at the end of the day, it’s what people do in the moment that creates the culture of safety,” said Linda Mimm, one of the hospital’s safety/quality specialists and registered nurse.

Abington Memorial pursued TeamSTEPPS™ in September of 2006 after members of its nursing staff learned of the program at a conference. While no major adverse safety events (injuries caused by hospital error) had occurred at the hospital prior to the implementation of TeamSTEPPS™, the suggestion to pursue the program was well received. Mimm said hospital leadership recognized the benefit of enhancing communication, reducing risk, and improving the culture of safety.

**About TeamSTEPPS™**

TeamSTEPPS™, or Team Strategies and Tools to Enhance Performance and Patient Safety, was a direct outcome of “To Err is Human.” It was released in 2006 as a free program with an implementation guide by the Department of Defense (DoD) and the Agency for Healthcare Research and Quality (AHRQ).

According to the AHRQ, TeamSTEPPS™ makes healthcare more efficient and safer. It is a teamwork system based on 25 years of experience and lessons learned from “high-reliability organizations” such as military operations, aviation, community emergency response services, and nuclear power industries. Organizations in these types of industries have conducted extensive research into how teams work, what makes them effective, and how to enhance team performance.

**TeamSTEPPS™: Overview**

The three-phase program is comprised of what the creators say are four teachable and learnable skills:

- **Leadership:** The ability to coordinate the activities of the team members by ensuring that team actions are understood, changes in information are shared, and team members have the necessary resources.
- **Situation Monitoring:** The process of actively scanning and assessing situational elements to gain information, build understanding, or maintain awareness to support the functioning of the team.
- **Mutual Support:** The ability to anticipate and support other team members’ needs through accurate knowledge about their responsibilities and workloads.
- **Communication:** The process by which information is clearly and accurately exchanged among team members.
More than 10 years after the Institute of Medicine published *To Err is Human: Building a Safer Health System*, researchers continue to reveal gloomy statistics on hospitalization:

- In July 2011, the World Health Organization (WHO) pointed out the dangers of hospitalization. According to WHO, a person admitted to a hospital has a one in 300 chance of dying from a healthcare error, while the chance of dying in an air crash is about one in ten million passengers. The organization cited infection as a major risk during hospitalization, followed by falls and medication errors.³

- An April 2011 report said the use of the Global Trigger Tool showed that U.S. hospital errors and adverse events/injuries caused by hospital errors are 10 times more frequent than previously estimated.⁴

- A November 2010 report from the Office of the Inspector General Office for the U.S. Department of Health and Human Services said that one out of every seven hospitalized Medicare beneficiaries is harmed as a result of problems with medical care. It also reported that unexpected adverse events added at least $4.4 billion a year to government health costs and contributed to the deaths of nearly 180,000 patients every year.⁵

The AHRQ and DoD offer TeamSTEPPS™ master trainer preparation training sessions. Trainers may independently prepare for the three-phase team training initiative using guides included with the program. Because master trainer sessions weren’t available when Abington Memorial undertook this project, training occurred independently.

Figure 1 summarizes a typical TeamSTEPPS™ implementation.

### TeamSTEPPS™ Implementation at Abington Memorial Hospital

#### Phase 1: Assessment

The goal of Phase I is to determine readiness for undertaking a TeamSTEPPS™ initiative through an organizational self-assessment. While AHRQ supplies an optional tool to complete this step, Mimm said the hospital considered results from their annual employee survey on patient safety. The results confirmed that promoting teamwork and tearing down the “silos” would benefit the safety of the hospital.

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**Figure 1—TeamSTEPPS™ implementation**

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Phase 2: Implementation

Phase 2 is the planning and execution of TeamSTEPPS™. In 2006, the hospital created the Center for Patient Safety and Healthcare Quality (CSQ), a dedicated department that serves as an oversight body for all patient safety efforts. One of the CSQ’s first initiatives was to implement TeamSTEPPS™.

Two members of the department studied the curriculum for three months to serve as TeamSTEPPS™ master trainers. Additional staff was trained to help lead the course to allow all clinicians to participate within a year. To optimize the program, the master trainers customized TeamSTEPPS™ materials and presentations by incorporating pictures of Abington staff and hospital-specific data and stories.

The course was piloted among the nursing leadership staff. Modifications were made based on their feedback before deploying the customized TeamSTEPPS™ program hospital-wide. Nursing leadership recommended that the course be reduced from six hours to four by cutting some of the “teamwork theory material.” “While teamwork theory is important for the trainers to know, we saw more value in focusing on the practical tools,” Mimm said.

Initially, four-hour training sessions were held twice weekly with approximately 30 participants in each block. Early sessions catered to nurses, and later included residents and attending physicians. Staff from departments such as the emergency trauma center, the operating room, and the physician network was trained as teams. Training sessions were also edited into two 90-minute sessions to further accommodate schedules.

The hospital has trained more than 2,000 nurses, nearly 400 physicians (representing more than 95 percent of the nurse and resident staff), and almost 700 attending physicians. Continuing education units for nurses and continuing medical education credits for physicians are offered upon completion of TeamSTEPPS™ training.

While change often will draw various emotions from staff, Mimm said there was little staff resistance. “I think the fact that the organization was committed to training staff and that staff were taken off the floor for several hours at a time [to receive training] helped demonstrate that this was something important,” Mimm said.

Phase III: Sustainment

The goal of Phase III is to sustain and spread improvements in teamwork performance, clinical processes, and outcomes resulting from the TeamSTEPPS™ training. To integrate teamwork skills and to put the tools into daily practice, trainers continually reinforced the TeamSTEPPS™ principles within their unit or department and provided staff with opportunities to practice and receive feedback.

TeamSTEPPS™ Tools Implemented at Abington Memorial Hospital

Leadership implemented mandatory, hospital-wide daily safety briefings because it forces staff to stop, interact, share risk awareness, and prioritize as a team. At the beginning of each shift change, staff gathers to discuss patient care plans for the day and to review a briefing checklist that addresses staff planning, supplies/equipment needed, patients with special circumstances (e.g., language barriers, high risk of falling or delirium), expected patient flow, bed availability, and patient transport needs. Huddles—ad hoc planning meetings to establish situational awareness and reinforce or adjust care plans—occur throughout the shift as needed.

“The goal was to create mindfulness of the threats to safety and empower individuals and teams to ‘create a safe day’ and own patient safety,” Mimm said.

Several other TeamSTEPPS™ tools used by Abington Memorial are listed below.

- **CUS and the two-challenge rule:** These are structured tools to encourage assertiveness and advocacy for patients. The “CUS” (“I am concerned, I am uncomfortable, this is a safety issue”) strategy calls for the voicing of any concern. The two-challenge rule ensures clinicians are heard by addressing their concerns at least twice.

- **Callouts:** Crucial information (e.g., information about an incoming trauma patient) is articulated verbally to help ensure that all team members are aware.

- **Checklists and timeouts:** Before each surgery, the operating room nurse calls a timeout so that the nurse, physician, anesthesiologist, and other clinicians can verbalize and agree on “critical facts” (such as patient name, procedure, anticipated safety issues, and blood and equipment needs). In April 2010, the hospital incorporated the World Health Organization (WHO) Surgical Safety checklist into the timeout process. This 19-item checklist was designed by healthcare professionals at WHO in response to safety issues in operating rooms around the world.

- **SBAR (situation, background, assessment, recommendation):** Clinicians use structured communication via SBAR technique during shift transitions, patient handoffs and transfers, and other circumstances in which physicians and nurses need to communicate critical, complete information about a patient.

- **Cross-monitoring:** Caregivers are encouraged to monitor each other’s actions (e.g., proper hand hygiene), which creates a “safety net” and peer checking/coaching that allows for the quick identification of errors and oversights to prevent escalation to harm.
A number of additional initiatives outside of TeamSTEPPS™ were adopted to increase patient safety and awareness at the hospital. Examples include:

- **Engagement of board of trustees:** Led by an administrative leader, hospital board members visit different hospital units to listen and learn from staff about patient safety concerns. They gain important understanding of how care is delivered which allows the board to make more informed decisions about administrative policies that affect patient safety. In addition, the first 30 minutes of monthly board meetings are dedicated to discussing patient safety issues, initiatives, and improvements. Since 2005, a former Chairman of the Board has personally invested in sending 35 to 40 staff and trustees to attend the Institute for Healthcare Improvement’s annual conference.

- **Patient safety coaches:** A patient safety coach is assigned by each unit and department to assist in local patient safety issues. They attend a monthly meeting led by the CSQ. Coaches commit to informing 10 members of the hospital staff about the topics covered that month and to promote safety behaviors on their units/departments. Coaches also disseminate patient safety information and new hospital initiatives, and assist in collecting unit-based data for improvement.

- **Early use of medical emergency team (MET):** Clinicians can call the MET (composed of a third-year resident, critical care nurse, and, if needed, a respiratory therapist) when they suspect that a patient is at risk of respiratory or cardiac arrest. The MET rescues patients before they experience an arrest and/or transfers the patient to the intensive care unit.

- **Better hand hygiene:** Abington Memorial dispatched “spies” to observe and report how often doctors and nurses washed their hands when entering and leaving patients’ rooms. Those caught “clean handed” are rewarded and recognized, while those caught “dirty handed” received a letter from a supervisor. After three times of non-compliance, clinicians received a letter from the chief of staff.

- **Ongoing solicitation of suggestions and concerns:** Patient safety suggestion boxes are located in prominent locations around the hospital. In addition, staff can dial S-A-F-E on an internal hospital telephone or click on a link provided on the hospital’s intranet to report a safety concern or suggestion. The S-A-F-E telephone line and computer link are monitored on a regular basis.

- **Information sharing:** The CSQ publishes a newsletter and distributes one-page flyers to department directors, unit supervisors, and patient safety coaches. In addition, hospital- and unit-level report cards are distributed to all units that measure performance against the Joint Commission’s National Patient Safety Goals.

- **Simulation center:** A dedicated room is available for staff to sharpen their teamwork skills and clinical decision making.

### Results

Since implementing TeamSTEPPS™ and other efforts, the hospital has achieved a number of results that contribute to overall patient safety. The most obvious indicator of progress is a drop in adverse events and deaths. From fiscal year 2007 to fiscal year 2008, the hospital experienced the following:

- 27% decline in inpatient adverse events per 1,000 patient days as measured by the Global Trigger Tool
- 19% decrease in total (inpatient and outpatient) adverse events per 1,000 patient days as measured by the Global Trigger Tool
- 30% decline in crude hospital mortality rate.

Since 2008, the hospital has measured serious safety events by rate and days since last serious safety event. This number is published on the intranet and allows situational awareness of harm by all staff. Since 2008, the hospital has reduced serious safety events by 86%.

**MET calls (proactive rescue of at-risk patients):** Figure 2 shows that clinicians are better at recognizing and communicating the early warning signs of respiratory and cardiac arrest. Calls to provide preventive care doubled since 2008, while the incidence of arrest outside of the intensive care unit declined.

![Figure 2—Proactive rescue of at-risk patients (MET calls)](chart.png)

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### Comparison of codes outside ICU to MET calls

- **Number of MET calls** (preventive care of cardiac or respiratory arrests)
- **Number of cardiac or respiratory arrests outside of the intensive care unit**
- **Trend**
Better hand hygiene: Observational assessments conducted throughout the hospital show that hand hygiene compliance rates increased to 97% in 2011—up from 31% in 2007. Figure 3 shows hand washing compliance against the Center for Disease Control’s guidelines.

Improved staff perceptions of teamwork and communication: Figure 4 shows an increase in nurses’ perceptions of teamwork, communication, leadership, responsibility for patient safety, and support when surveyed six months after TeamSTEPPS™ implementation. On average, scores rose from roughly 3 to 4 (on a five-point Likert scale).

To keep patient safety fresh in the minds of the frontline, screen savers on computers throughout the hospital feature photos of front-line staff members with reminders regarding tools and strategies taught during the TeamSTEPPS™ sessions. A monthly internal newsletter, Nursing Notes, highlights a monthly safety tool and communicates patient safety stories.

Next Steps

While extremely pleased with the results from TeamSTEPPS™, Mimm says that Abington Memorial is ready to explore and introduce additional tools and approaches to strengthen its culture of patient safety. Across the entire organization, leaders, physicians, and staff will be adopting standardized behaviors for high reliability in an effort to further decrease harm and improve reliable performance.

The hospital submitted an organizational assessment and application to the Malcolm Baldrige National Quality Award in 2010. They received expert feedback on opportunities for further excellence, and is planning on submitting another application in 2012, Frye said. “We’re continuing our journey to benefit the patients we serve and to achieve our mission: to be the most trusted healthcare partner,” Frye said.

What Abington Memorial Hospital Learned

- There is value in training teams that work together.
- You have to have leadership support.
- You have to have expert trainers within each team.
- You have to tailor the program for your institution.
- Establish that the training is a “safe” environment.
- Make it fun.
- Personalize the material using examples from the organization and make it interactive.
- A sustainability plan is crucial.

For More Information

- Contact Maureen Frye, MSN, CRNP, Director, at mfrye@amh.org, or Linda Mimm, RN, DL, Safety/Quality Specialist at lmimm@amh.org
- Visit Abington Memorial Hospital’s Center for Patient Safety and Healthcare Quality at amh.org/aboutus/patientsafetyandquality/designing-your-quality-care/csq
- Learn about quality in healthcare at asq.org/healthcare-use/why-quality/overview.html
- TeamSTEPPS™ program information and course materials are located at ahrq.gov/teamsteppstools
- Find out more information about the Global Trigger Tool by visiting ihi.org/knowledge/Pages/Tools/default.aspx
References


About the Author

Megan Schmidt is a staff writer for ASQ.

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