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Speaking up in the surgical suite

Hospital Encourages Cohesive Teamwork as Key to Preventing Errors

By Tyler Smith

You're preparing for major surgery. While going over the details with your physician, he glances up from some paperwork.

"By the way, I just wanted to let you know that my surgical team and I have had some problems communicating during the procedures," he says. "Is that going to be a problem?"

It's an admission none of us is likely to ever hear, of course, but in fact, lack of communication between health care providers in a variety of settings, including the operating room, has long been a concern of agencies that monitor quality-of-care and patient safety issues.

Research nurse scientist Catherine Kleiner is part of a hospital team working to improve communication between surgical team members.

"The Joint Commission has identified communication issues as the leading cause of medical errors and near-misses in the surgical setting," said Catherine Kleiner, RN, PhD, a research nurse scientist at University of Colorado Hospital. Those errors include leaving surgical items inside the patient, performing the wrong procedure on the wrong site or on the wrong patient, administering an improper medication dose, mislabeling or failing to obtain specimens, and so on.

Kleiner is among a group of hospital staff and physicians participating in a long-term effort to improve communication among surgical team members by following a methodology dubbed Crew Resource Management. CRM, as it's known, was originally developed by NASA and has long been used by the airline industry. The federal Agency for Healthcare Research and Quality took the concepts of CRM and adapted them to the medical world.

Let's talk. Simply put, CRM demands that members of any team brief one another before beginning a job, communicate clearly and unambiguously while they are doing it, and debrief together at the conclusion to wrap up final details and identify what went right and what could be improved the next time around.

In the surgical setting, for example, briefings include introductions of team members and cover a variety of critical concerns, including patient positioning, equipment and instrumentation that will be used, contingency plans if the procedure doesn't go as planned, patient allergies and comorbidities and much more.

A proper briefing should also include opportunities for team members to ask questions and a time-out to ensure the correct patient is undergoing the scheduled procedure on the correct site. And the surgeon should express his or her expectation that anyone in the room can and should speak up if anything unsafe occurs.

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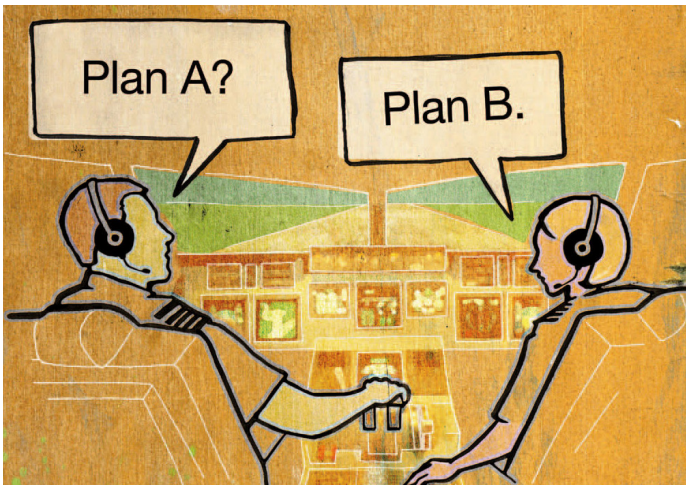
The debriefing aims to ensure that all team members are present and solicits feedback about the procedure, actions that might be taken to improve it and an opportunity for final questions.

Tone deaf. It all sounds straightforward, but several factors may combine to thwart communication. Team members may be unfamiliar with one another, making interchange more difficult unless there is an ingrained structure. And the OR is a busy place during a procedure, Kleiner said, with lots of multitasking that detracts from concentration. Team members may be anxious to wrap things up at the end of the procedure, sometimes leaving a nurse to speak futilely to an otherwise occupied group, she added.

Then there is the question of the OR environment. It's not always one that encourages open communication, said Andrew Winkler, MD, an otolaryngologist and surgeon at UCH. Winkler is one of several physicians helping to improve communication and teamwork in the surgical setting.



Crew Resource Management, frequently used in the airline industry, encourages team members to develop contingency plans.

Winkler said the traditional structure of the OR is hierarchical, with the surgeon clearly in charge and calling the shots. An environment in which people are afraid to speak up for fear they might be wrong sets the stage for errors, he said. "We're trying to focus on more of a team approach in the OR."

The hospital has a relatively lengthy history of implementing CRM. It piloted the methodology with the Cardiothoracic Surgery team in 2006 to address staff retention issues. The entire surgical staff received training in 2008. Monthly audits to evaluate briefings and debriefings followed in 2009 and 2010. Also in 2010, the hospital introduced the World Health Organization Surgical checklist, which includes key topics to be covered during briefings and debriefings, as well as behaviors by team members that encourage effective communication.

Rebooting. Yet communication gaps persisted. In 2011, a grant from Cardinal Health Fund paid for coaches from Denver-based training and consulting company Safer Healthcare to deliver CRM coaching to surgical staff. The project included observations of 160 surgeries to measure the quality of briefings and debriefings in the OR before and after coaching, on a scale of 0 to 5.

The scores in both cases improved after coaching. Even so, the average debriefing score (2.99) was significantly lower than the briefing score (3.64). Kleiner and others *(see box)* presented the findings to the hospital's OR Committee. They're working with physicians to instill the principles of CRM in all OR team members and ensure that they are followed consistently.

Also in the works is a video that demonstrates effective communication techniques, simulated training, and additional observations of both outpatient and inpatient surgeries. In a separate effort, some 300 Obstetrics staff have received CRM training. Observations focused on C-sections; post-training observations are scheduled in February, Kleiner said.

Listen up. The extra effort is necessary to ensure patient safety, she stressed. Pathologists, for example, need properly labeled specimens to make sound judgments about additional care a patient might need. In turn, the patient's next provider of care requires accurate test results and diagnoses to make informed decisions about follow-up treatment plans, medications and therapies.

> *"It's important that the next-care provider, regardless of where he or she is, can look at the care the patient received and have the right information," Kleiner said.*

At the very least, Winkler said, seemingly minor errors like a mislabeled specimen reduce efficiency. "It means a phone call from the pathologist and that wastes time," he said.

Effects on care. Poor teamwork and communication can reduce the quality of patient care in more subtle but no less important ways, said Katherine Halverson-Carpenter, RN, the hospital's director of Perioperative and Obstetrical Services. She launched the CRM pilot in 2006 after noticing some disturbing trends in the

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Cardiac and Vascular service line, particularly Cardiothoracic (CT) Surgery.

"There were many communication issues between surgeons and nurses," she recalled. "They were not cohesive." The result: team leadership in CT turned over 100 percent between 2004 and 2006. Total team turnover was between 60 percent and 80 percent during that period, she added.

> *"We had trouble recruiting people to be part of the team," Halverson-Carpenter said. As a result, the nurses "never moved beyond competent staff. They never developed into expert clinicians. Both nurses and surgeons were frustrated."*

With the support of CT division head David Fullerton, MD, Halverson-Carpenter brought in CRM training in August of 2006. Surgeons, anesthesiologists, residents, nurses and perfusionists participated. One year later, the team retained its team leader and six other members. Today the average tenure of a CT team member is three to five years; the average yearly retention rate is 75 percent.

"Now, we have no difficulty recruiting staff to be part of that team," Halverson-Carpenter said.

Closed loops. The CRM training, she explained, gives team members an opportunity to identify common problems and seek mutually satisfactory solutions. It also reinforces in team members a structure that improves preparation, she said.

For example, identifying contingencies during the briefing and developing alternative plans means nurses and other providers aren't caught by surprise if, for example, the structure of a patient's heart isn't what was anticipated. The team can have different equipment and instrumentation ready, adjust anesthesia and so on.

Seemingly simple observations during briefings can make a big difference to the patient and the efficiency of hospital operations. Winkler related the example of a surgical patient who was susceptible to migraines. During the briefing, he asked if any of the team members had concerns for the recovery phase. A scrub nurse who had learned the patient had a migraine in pre-op caused by bright lights suggested that the team consider putting her in a darkened room during post-op.

Debriefings, in turn, help team members "close the loop" on the entire procedure and critically review their own performance.

"It's a process that encourages constant learning," Halverson-Carpenter said.

One need only watch a Denver Broncos game to see an example of debriefing at work, Winkler said.

"After every possession, you see [quarterback] Peyton Manning on the sideline going over with his unit what went right and what went wrong," he said. "If Peyton does this we all should. The surgeon must initiate it and is responsible for buy-in from the other team members. He or she knows the patient best and knows about adverse outcomes, both short term and long term."

Ultimately, good communication helps keep a team in place, and that's crucial to good patient care, Halverson-Carpenter added.

"Nurses, for example, develop a sense of mastery and great depth of skill in a particular area," she explained. "From a surgical perspective, you need a high level of expertise."

The Process Improvement Crew

Four UCH team members led the 2011 project aimed at improving the quality of team communication through CRM training and coaching.

- Catherine Kleiner, RN, PhD
- Katherine Halverson-Carpenter, RN, CNOR
- Terri Link, RN, MPH
- Carol Ruscin, RN, MSN, CCM