Harvard Teaching Hospitals Talk to Improve Communication Among Surgeons

by Tom Augello

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On neutral territory, away from their everyday distractions, the chairs of the surgery programs at four academic hospitals in the Harvard medical system are experimenting with non-competition. Together, they are exploring what malpractice data can teach them about how to prevent errors from harming patients—and in turn, what they can teach each other.

In a 2007 study of closed malpractice claims from liability insurers across the United States,[1] Dr. Caprice Greenberg[2] and colleagues looked at the second most common category of surgical errors that lead to harm: miscommunication.[3] Even before the study was published, surgical leaders in the Harvard system were combing the data.

"The underlying patterns were ones that gave us some ideas of avenues to go down for interventions," recalls study co-author, Dr. Atul Gawande.[4] "So, at that point we started getting the chairs[5] of Harvard's major surgery departments together, mainly to start talking about what the data were showing and see if they wanted to collaborate as a group in trying to address them."

They did.

CRICO/RMF, the malpractice insurance company that covers the Harvard medical institutions, convened the group of daytime competitors to become collaborators at night. Over the course of two years and several late nights, these surgical chairs considered what they could do together that they could not do equally well, or quickly, apart.

The surgical chairs quickly focused their attention on *breakdowns in communication with* attending surgeons. According to the data, communication errors that led to patient harm most frequently involved a breakdown in a one-to-one transfer of information, and those fumbled transfers most frequently featured an attending physician.[1]

Additionally, the location of the communication errors tended to be outside of the operating room (OR). When the researchers excluded sponge count errors—which occur exclusively and uniquely in the OR—surgery communication errors no longer looked like they occurred evenly in the pre-op, peri-operative, and post-operative domains. Non-sponge counts communication errors in the OR were still evident (19 percent), but considerably less so than those errors that occurred pre-operatively (34 percent) and post-operatively (37 percent).

"Many of the current surgical communication initiatives, like timeouts and crew resource management, address OR issues," says Dr. Greenberg. "But what our results suggest is that we also need to pay a lot of attention to the system that is getting patients into the OR and the system that is taking care of them afterwards."

Dr. Greenberg believes that the findings of her study counter perceptions that the best way to fix weaknesses in the system is to focus solely on residents. Attending surgeons—keepers and receivers of the information that needs to be transferred in order to effectively prevent adverse outcomes—should share the spotlight of interventions to reduce communication errors.

The Greenberg study goes so far as to suggest the use of "triggers," that is, patient conditions that will require residents to contact attending surgeons. Examples might include transfer into the ICU, or unplanned intubation. The authors concluded that up to 44 percent of the communication breakdowns outside of the OR might have been prevented with the use of specific triggers.

Pulling Together

After the initial assessment, the surgical leaders at Harvard asked Dr. Gawande's team to dig deeper into the medical malpractice case files by sorting through the high level of detail in depositions, expert medical reviews, and case analyses to find underlying patterns that would help narrow the focus even further.

"There is a pattern for a few common critical events," says Dr. Gawande, "like the patient who ends up getting a blood transfusion in the middle of the night or a patient who starts to have respiratory failure, but the team in the hospital doesn't get in touch with the surgeon in a timely way."

Evidence that a significant proportion of adverse surgical events involved patients receiving routine care triggered questions about intervention. For example, how do you ensure that critical information about the post-operative patient reaches the attending within an hour 100 percent of the time, rather than 70-80 percent?

Even with fairly rare occurrences, such as an attending who fails to answer a page, the group considered how to make sure that all the backup systems actually work, for example that the tracking down of a non-responding attending—or communication with another attending—happens quickly.

Dr. Gawande says that even a high level, multi-institutional collaboration eventually comes down to nuts and bolts. But instead of addressing a range of technical issues within multiple procedures, the Harvard group has looked for common elements in the general process of preparing patients for surgery and helping them recover.

"We are starting to recognize that, across all of those surgeries, there are common elements, that orthopedics really is not all that different from gynecology," Dr. Gawande says. "Those

common factors have to do with recurrent patterns of what happens when you have a patient develop a terrible complication and how they are managed? What kind of communications occur and how do you have people trained to handle the most difficult technical situations, whatever the specialty?"

The data suggest that additional approaches to reducing harmful communication errors, such as standardized handoffs and transfer protocols, in conjunction with the use of a trigger list might have prevented up to 73 percent of the inpatient errors seen in the malpractice cases Dr. Gawande's team studied. No one involved in the Harvard surgery collaborative doubts that surgeons already care about and feel responsible for the well-being and safety of their patients. And, Dr. Gawande acknowledges, any efforts by third parties to force changes upon this cohort will meet resistance unless the surgeons can see that the agents of change understand their world, that the interventions are practical, and that the data support their effectiveness. Consideration must also be given to the fact that the medical training process that made them highly qualified surgeons did not prepare most of them to be highly qualified in patient safety.

"Those are different skills," Dr. Gawande says. "When I got out of my training, the three things that I felt I was really well-trained for were: making diagnoses, being a technically good surgeon, and trying to be kind and empathic toward people. It turns out that having those things was not enough. If an operation was going to go really well for a patient, I not only had to be able to do my job well and care about the patient; I also had to figure out how to deal with a really gargantuan system."

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The Change Process

Increased development and use of error and outcomes data help lead to solutions that surgeons will adopt. The involvement of surgical leaders to develop interventions for their own institutions also improves the chance they will be well received. Whether or not these interventions lead to learning—and how fast that learning is shared—will also depend on continuous use of data, and a willingness to share difficult problems and solutions. Dr. Gawande says the group of Harvard surgical chairs has been learning how to coach themselves in carrying along a change process.

"We have to be able to absorb an enormous amount of know-how and turn it into practice in lots of places," Dr. Gawande says, "and I think that the surgical chairs getting together is part of the answer, by having an ongoing discussion and using benchmarks to ask, 'How far have we gotten in the last few months on the major issues we want to be working on? Where are the roadblocks that we're running into? How have you overcome it at the Beth Israel Deaconess? How have you overcome it at the Mass General?' If you look around and you realize that one of these places is actually doing something that is a lot better than everybody else, maybe we all should be doing it." ■

Notes and References

1 Greenberg C, Regenbogen S, Studdert D, Lipsitz S, Rogers S, Zinner M, Gawande A. Patterns of communication breakdowns resulting in injury to surgical patients. *J Am Coll Surg.* 2007; 204(4):533–40.

2 Dr. Greenberg is an Instructor in Surgery, Disvision of Surgical Oncology at Brigham and Women's Hospital (Boston).

3 The top category was technical error.

4 Dr. Gawande is a surgeon and researcher at Brigham and Women's Hospital (Boston), Associate Professor of Surgery at Harvard Medical School and the Harvard School of Public Health and director of the World Health Organization's program to reduce surgical deaths

5 Dr Michael Zinner, Brigham and Women's Hospital; Dr. Andrew Warshaw, Massachusetts General Hospital; Dr. Josef Fischer, Beth Israel Deaconess Medical Center; Dr. Alan Retik, Children's Hospital Boston.