For a WEB EXTRA with a video and a podcast about the MTT program, see dartmed.dartmouth.edu/sp11/we03.

Aviation approach saves lives in the OR

"Houston, we've had a problem." That famous line, spoken by Apollo 13 astronaut James Lovell, is an example of the clear, direct communication that is typical among flight crews—and that brought the Apollo 13 astronauts safely back to Earth. Many quality improvement experts in health care have called on hospitals to adopt the communication strategies of aviation, but, until recently, it hasn't been done on a large scale.

Crew: From 2006 to 2010, the operating room staffs at 121 Veterans Affairs hospitals nationwide underwent specialized training based on an aviation approach called crew resource management. The result? An estimated 2 fewer people died for every 1,000 noncardiac surgeries, and 151 mistakes—such as operating on the wrong body part—were avoided across all the facilities. That's according to the leaders of the project, psychologist Peter Mills, Ph.D., and his colleagues at the Dartmouth-affiliated VA National Center for Patient Safety field office in White River Junction, Vt.

"I really didn't expect to see a reduction in mortality," says Mills.

Like flying a spacecraft or an airplane, "surgery is this incredible orchestration," says Mills. "All these things have to unfold and be perfect for things to go well."

The Medical Team Training (MTT) Program, as the VA project is called, includes two months of preparation and planning with a designated team at each hospital; a daylong onsite learning session that all surgical staff attend; and four quarterly follow-up interviews with each hospital's implementation team.

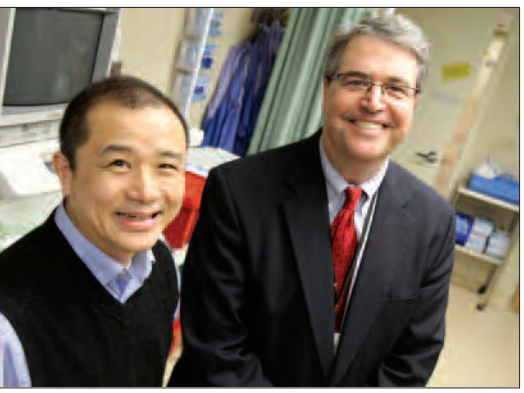
Risks: "Clinicians were trained to work as a team; challenge each other when they identify safety risks; [and] conduct checklist-guided preoperative briefings and postoperative debriefings," wrote Mills and his coauthors in the *Journal of the American Medical Association* (JAMA).

The MTT team—which also included statistician Yinong Young-Xu, Sc.D., and nurse Julia Neily, M.S., M.P.H.—compared 74 facilities where training took place to 34 where it did not.

"When we started this program . . . I really didn't expect to see a reduction in mortality," says Mills. Other operating-room training programs have shown improvements in teamwork and even reductions in errors. But MTT is the first one to be implemented on such a large scale, to be studied alongside a control group, and to show that improved communication can actually save lives. "The front line now for patient safety," says Young-Xu, is getting clinicians to communicate better.

Wane: Mills and his team plan to follow up to see if adherence to MTT strategies wanes over time. They also hope to adapt MTT to other aspects of hospital care, like handoffs—when the care of a patient is passed from one clinician to another, such as at a shift change.

"The actual things we are training people to do are not complicated," says Mills. "But the key is getting people to do it." Thanks to this study, there's now evidence that—in health care as in aviation—it's worth the effort. JENNIFER DURGIN



GEOFFREY HOLMAN

The MTT team included Young-Xu (left) and Mills.

An issue of the *American Journal of Reproductive Immunology* has been devoted entirely to the proceedings of a symposium held at DMS on the sexual transmission of AIDS. See http://bit.ly/gJz7cU.

Additive effect

Hormone replacement therapy, a once-common treatment for the symptoms of menopause, has now been linked to early-stage breast cancer—in addition to invasive breast cancer. That's according to a new analysis by researchers from Dartmouth, San Francisco, and Seattle. The study, published in the *Journal of Clinical Oncology*, examined data from over 2 million mammograms of 700,000 women. "The effect of hormone therapy on breast cancer risk is reversed soon after discontinuation," noted DMS epidemiologist Tracy Onega, Ph.D., and her coauthors. Still, they say such therapy "should be limited to the shortest duration possible."

Detection projection

Colonoscopies could provide patients with a false sense of security, found a study by DMS's Heiko Pohl, M.D., and Douglas Robertson, M.D. "A significant number of patients undergoing a screening colonoscopy that did not detect cancer actually have a malignant lesion or adenoma that could progress in a short [time]," they wrote in *Clinical Gastroenterology and Hepatology*. The researchers estimate that almost 1 in 500 people who pass a standard screening will develop colorectal cancer within five years—a number that could be lowered by improving adenoma detection, they argue.