

Cutting down in operating rooms



Tribune photo by José Moré

Dr. Constantine Frantzides (left) performs surgery using a voice recognition system at Louis A. Weiss Memorial Hospital.

High-tech tools, including a system that responds to spoken commands, allow surgeons to cause less trauma, speeding patients' recovery and saving time.



By Jon Van
TRIBUNE STAFF WRITER

Though it once was standard for a surgeon to slice open his patient and gaze directly upon the operating field, today he's more likely to slide in a miniature camera, light and special tools through small incisions and watch himself work on television.

The surgeon may even talk directly to the tools, thanks to a new voice recognition system called Hermes.

"Hermes: more pressure," Dr. Constantine Frantzides barked into a microphone he wore during a recent operation at Louis A. Weiss Memorial Hospital on Chicago's North Side. The Hermes system increased the gas pressure within the patient's abdomen, acknowledging the command with information displayed on a video screen.

Whether it's called minimally invasive, bloodless or laproscopic, surgery is enlisting new technology to minimize the trauma caused by large incisions, thereby reducing pain and recovery



time. The trend toward doing more surgery with less cutting and almost no bleeding has gathered so much momentum that some doctors believe it's time to reinvent the basic design of operating rooms to accommodate a fundamental technological shift.

Frantzides is one such advocate, and he has put his ideas into practice at Weiss Hospital where he's worked with industry vendors to create a technologically advanced operating room.

In Frantzides' OR, television monitors
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A monitor in the operating room shows an image from a camera inserted into a patient's body through a small incision during minimally invasive surgery.

Surgery

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and much other high-tech apparatus are suspended from ceiling-mounted booms that can be swung from one position to another as needed without interfering with the surgeons and nurses gathered around the patient.

A most fascinating feature is Hermes, which enables the surgeon to speak directly to the equipment to order technical adjustments.

The surgeon can instruct the system to pump more carbon dioxide into his patient's abdomen to keep it open and visible to the video camera, and he can ask for the lighting to become brighter or for a white pointer arrow on the TV screen to change positions.

Frantzides, who directs minimally invasive surgery for the University of Chicago hospitals, did all this and more on a recent morning as he was repairing a patient's hernia.

Besides deftly manipulating the patient's tissue to repair the hernia, Frantzides provided a running commentary for the benefit of surgical residents assisting him. Like a football coach, he used the white arrow on the TV screen to point to parts of the

patient's anatomy, name them and explain his repair strategy.

Some might regard use of voice commands instead of just reaching over to twist a knob as excessive gadgetry, but that's not the case, assures Joan Cahill, laproscopic surgery coordinator at the University of Chicago and Weiss.

In a traditional operating room, twisting dials usually requires the coordinator to reach over the patient to a hodgepodge of equipment stacked on a portable cart. Some coordinators may be unfamiliar with the equipment's settings, and in any event, touching anything in an OR can compromise the setting's sterility and is best avoided if possible.

"Making those adjustments as the surgeon requests them means that I'm not able to handle other jobs," Cahill said. "It could mean having to put another person into the operating room."

Automating the process cuts the time spent setting up the room for an operation, which, in turn, cuts costs, Cahill said.

The Hermes system, which was supplied to Weiss by Stryker Endoscopy Inc., based in Santa Clara, Calif., requires that each surgeon who uses it spend time training the machine to recognize his or her voice. Once that is done, a computer disk of each surgeon's specific voice software

is inserted into the machine when he uses the operating room.

Tony Furjanic, Stryker's Chicago representative, said his firm regards surgical suites designed specifically for minimally invasive procedures as the industry's future. His firm has installed equipment in about 250 such suites, Furjanic said.

"We call them endosuites," he said. "About half of general surgery procedures are now being done laproscopically. When you roll equipment needed for these procedures in and out of operating rooms on carts and bang it around, you get more equipment failure. It makes sense to design ORs to accommodate the new equipment."

Berchtold Corp. of Charleston, S.C., a supplier of surgical power booms, cameras and lighting equipment, also helped build the Weiss operating room. Andy Reding, Berchtold's marketing director, said that while the concept hasn't yet gained wide acceptance, "it's definitely becoming more common. Most of the operating rooms available today were built 20 years ago or based on 20-year-old ideas. That just doesn't take into account all the new technologies surgeons are using today."

The University of Chicago's Frantzides, who was recruited from the Medical College of Wis-

consin at Milwaukee, is a pioneer in promoting low-cut surgery who has adapted eight traditional procedures to laproscopic technology.

While he has often encountered opposition from older surgeons who are emotionally wedded to open field procedures, Frantzides has no doubt that time is on his side.

"We'll soon see a generation of surgeons who were raised on Nintendo," said Frantzides. "I know that when I play computer games against my son, there is no way I can beat him. There's no doubt that these young people coming up will be more comfortable with minimally invasive techniques than any of us who learned the old way and adapted to the new."

And while all this makes sense and supports the notion that the technology is laudable, there still lingers a possibility surgeons really like this stuff because it's just neat and strokes their egos. The Hermes system doesn't dispel that.

At the conclusion of an operation, Hermes is programmed to announce to the operating room that "you're a great OR staff" and tell the surgeon that he is wonderful as well. A smiling Frantzides demonstrated the option of surgery's equivalent of canned applause and said, "Why not? It makes everyone feel good."