

St. Vincent tracking surgical sponges

Chipping away at mistakes

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TELEGRAM & GAZETTE STAFF

WORCESTER — Leaving sponges inside patients is one of the most common medical errors occurring in hospitals, and one of the most preventable.

It is estimated that sponges are left in patients in between 1 in 2,000 and 1 in 6,000 surgeries in the United States, according to a 2000 report published in the *World Journal of Surgery*.

The biggest step St. Vincent Hospital has taken to reduce the chances of leaving sponges in patients is the use of a new device that can detect a sponge before surgery is completed.

Using tiny chips embedded in a seam of each sponge, the RF Surgical Detection System can detect the sponges so they can be removed.

Last year, out of more than 17,000 surgeries, the medical staff at St. Vincent left four objects in patients. One was a sponge. Twice, doctors left an intravenous catheter inside a patient, and once a piece of equipment broke off inside a patient.

The errors were duly reported to the state, along with the steps the hospital took to make sure the errors did not occur again.

Sponges left inside patients can cause infections and other complications. If left inside, the sponge usually has to be removed with another surgery.

St. Vincent has been using the technology since May. It is one of only 75 hospitals across the country, and the first in Massachusetts, to implement the RF Surgical Detection System.

“We’re all human, and we all understand that humans are not infallible,” said Dr. Octavio Diaz, chief medical officer at St. Vincent Hospital. “This is one more way for us to assure patient safety, and act as a mechanical check on our human behavior. We believe we are leading the way on patient safety.”

The sponge-detection technology is used on several categories of “high-risk” patients: Patients undergoing emergency surgery, obese patients, women giving birth, and patients having surgery on more than one area of the body. Doctors also have the choice of using the sponge-detection system in other surgeries. The system only detects sponges, and is not being used to detect clamps or



T&G Staff/DAN GOULD
St. Vincent Hospital Chief of Surgery Leon Josephs hold a surgical sponge while surgical technician Luciana Perez holds the detector.

other surgical instruments.

“Our biggest risk, and any surgeon’s biggest risk, is that someone is much more likely to leave behind a sponge than a piece of equipment,” said Dr. Leon Josephs, chief of surgery at St. Vincent. He said with a smile, “We want no sponge left behind.”

The system works with sonar technology developed by the U.S. submarine industry, according to Paul Popovich, northeast regional manager for RF Surgical Systems Inc. of Bellevue, Wash.

Each of the hospital’s sponges — which actually are thin cotton cloths — has a thin, tiny chip embedded in a seam. The chip, which is about the size and shape of a grain of rice, emits a low-frequency AM radio signal.

Doctors or nurses can detect the chip with a wand — a large plastic circle that plugs into a small box — waved over the patient.

If there is a sponge still inside the patient, the wand will beep, and the surgeon will know approximately where the sponge is. The wand can detect a sponge up to two feet away.

Three times during surgery, the wand will be used to keep track of the sponges: once when the surgery is completed but the patient is still open; again when the patient is being stitched up; and finally when the incision is completely closed.

The wand can be used numerous times over 24 hours, and then has to be discarded, according to Mr. Popovich. Each wand costs about \$15.

Nurses still will be required to count out the number of sponges and equipment to be used, count them again during surgery, and once more when the surgery is completed.

The sponge-detection system will replace the old way of checking for sponges in high-risk patients, which was with an X-ray. Each sponge has an X-ray-detectable strip inside.

The X-ray can take 20 to 30 minutes to process, Dr. Diaz said, but moving the wand over the patient only takes a few seconds. The sponge-detection technology cuts down the amount of time that a patient has to spend under anesthesia, he said.

Limiting the number of medical errors at St. Vincent Hospital has become a top priority. Last year, St. Vincent had 25 “reportable serious offenses,” more than any other hospital in the state. Twelve of those were falls, and the hospital has taken several steps to address high-risk patients.

To limit falls, St. Vincent has begun having patients at risk of falling wear yellow hospital gowns and booties, as an alert to hospital staff. Most patients wear blue or brown gowns.

Patients at risk for falls now have their medication dosages checked more often than other patients, he said, and the staff has increased the number of times it will help such patients get to the bathroom or to a chair.

“We take patient safety very seriously,” Dr. Diaz said. “We are proud to be leading the way on patient safety.”