# ***What Doctors Leave Behind- USA TODAY***

## More than a dozen times a day, doctors sew up patients with sponges and other supplies mistakenly left inside. The mistake costs some victims their lives.

(Photo: Grant T. Morris for USA TODAY)

### Story Highlights

- Some of these victims lose parts of their intestines; some don't survive
- Hospitalizations involving a lost sponge or instrument average more than $60,000
- New sponge-tracking systems typically add just $8 to $12 to an operation's cost



Erica Parks knew something wasn't right in her belly when she left the Alabama hospital that performed her cesarean section in the spring of 2010.

Over the next month, her stomach grew so swollen that she looked pregnant again. By the sixth week, her bowels had shut down entirely. Parks, an Air Force major, staggered in to see her doctor, who sent her immediately to the emergency room.

X-rays showed that a surgical sponge the size of a washcloth had been left in Parks' abdomen. After a six-hour emergency surgery to untangle the infected mass from her intestine, she needed nearly three weeks of hospitalization.

Parks, now 40, had suffered from what is known officially as a "retained surgical item" — a sponge or instrument left in a patient's body. Such mistakes are considered so egregious and so preventable that they're referred to in the medical world as "never events." They simply are not supposed to happen.

**MORE COVERAGE:** When health care makes you sick

**DIRTY MEDICAL NEEDLES:** Thousands at risk in USA

**SUPERBUGS:** Invade U.S. health care facilities

**INFECTION:** More could be done to stop deadly bacteria

But they do, about a dozen times a day.

Thousands of patients a year leave the nation's operating rooms with surgical items in their bodies. And despite occasional tales of forceps, clamps and other hardware showing up in post-operative X-rays, those items are almost never the problem. Most often, it's the gauzy, cotton sponges that doctors use throughout operations to soak up blood and other fluids, a USA TODAY examination shows.

Yet thousands of hospitals and surgical centers have failed to adopt readily available technologies that all but eliminate the risk of leaving sponges in patients.

The consequences are enormous. Many patients carrying surgical sponges suffer for months or years before anyone determines the cause of the searing pain, digestive dysfunction and other typical ills. Often, by the time the error is discovered, infection has set in.


Lynn Bridgewater, director of operations and perioperative services at Indiana University Health Methodist Hospital in Indianapolis, shows how a surgical team can scan a patient for surgical sponges with embedded RF devices.(Photo: Matt Kryger, The Indianapolis Star)

The complications can last a lifetime. Some victims lose parts of their intestines; some don't survive.

"I thought hospitals had procedures and checks so these problems couldn't happen in this day and age," Parks says. "I'm still not 100%; I don't know if I ever will be. I still have to take medicine that keeps your (digestion) flowing. They told me there might be repercussions if I try to have another kid. It's been a terrible ordeal."

A USA TODAY review of government data, academic studies and legal records suggests that far more people may be victims of lost surgical objects than federal statistics suggest. And the medical community's inaction comes at a high price.

Thousands of victims: There's no federal reporting requirement when hospitals leave sponges or other items in patients, but research studies and government data suggest it happens between 4,500 and 6,000 times a year. That's up to twice government estimates, which run closer to 3,000 cases, and sponges account for more than two-thirds of all incidents.

Solutions ignored: The nation's hospitals have balked at using electronic technologies that sharply cut the risk of sponges being left in patients. Fewer than 15% of U.S. hospitals use sponges equipped with electronic tracking devices, based on a USA TODAY survey of the companies that make those products.

Costly consequences: Hospitalizations involving a lost sponge or instrument average more than $60,000, according to data compiled by Medicare, which denies payment for costs stemming from such errors. Related malpractice suits cost hospitals, on average, between $100,000 and $200,000 per case, several research studies show.

A decade ago, a landmark report on health care quality ranked lost sponges and instruments in the most serious category of medical errors. Issued by the National Quality Forum, a congressionally funded non-profit, the report urged immediate steps to drive down incidence rates, including mandatory reporting to track cases.

Today, there still is no national reporting mandate, and the available data suggest little or no progress in curbing incidence rates, particularly for sponges.

Every day, LeClair tries to stretch out the scar tissue that has started to wrap itself around some of his internal organs as a result of extensive surgeries.  Grant T. Morris for USA TODAY
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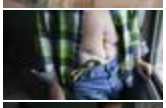
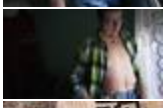
- 
- 
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"It's a recurrent, persistent and nearly totally avoidable problem," says Atul Gawande, a Harvard public health professor and surgeon at Boston's Brigham and Women's Hospital. "There are technologies that reduce the risk, that actually reduce the overall cost (to hospitals and insurers), and yet they are not the standard. That, to me, is the shocking thing."

Sponge-tracking systems typically add $8 to $12 to the cost of an operation — a tiny fraction of the average procedure's price. But with hospitals doing thousands, even tens of thousands of surgeries a year, the investment still has not been an easy sell, despite the promised savings in liability costs.

For many hospitals, lost sponges and other surgical items aren't considered a pressing concern. Other errors, such as lapses in infection control, are more common. And because symptoms often don't occur for months, even years, many of the cases are never tracked back to the institution where they originated. So the people who are responsible may not realize they have a problem.

"In context of all the things we're worrying about and striving to improve so patients are experiencing better outcomes, this is a more rare event," says Nancy Foster, the American Hospital Association's vice president for quality and patient safety.

As hospitals grapple with tight budgets, "the question is, 'How do we invest scarce resources in achieving safer care for our patients?'" Foster adds. Deciding whether to invest in electronic sponge-tracking systems "becomes a matter of prioritizing … and identifying whether this particular issue rises to being a this-year problem."

**A WAKE-UP CALL**

For years, doctors and nurses in the highly regarded Indiana University Health system viewed lost sponges as a problem reserved for others.

What Lenny LeClair believed was a devastating stomach bug ravaged his body before a CT scan showed the real problem: several surgical sponges mistakenly left inside him after a previous abdominal operation. This is a very sick Lenny in the foreground vs. what he looked like, healthy, in the background.(Photo: Family photo)

Like most hospitals, they used sponge counts to keep track of the gauzy pads during surgery: count the number that go in; count the number that come out. They had a better-than-average success rate. Of 34,000 surgeries performed each year at IU Health's three-hospital campus in Indianapolis, they'd typically get one or two cases in which sponges were left in a patient.

Then, in 2006, the number of lost sponges jumped, climbing to a rate of about one a month, and clinical staff could find no explanation.

"It was very upsetting — after each case, we'd do a review, trying to figure out, my God, how is this happening," says Lynn Bridgewater, director of operations and perioperative services at IU Health's Methodist Hospital in Indianapolis. "We did education, we changed to a different (counting) system, we tried having another person in the room doing counts. We were looking everywhere for solutions."

The health system's clinical leaders began testing sponge-tracking technologies and settled on one that uses sponges embedded with a tiny radio-frequency tag. Before patients are closed up after surgery, they get scanned with a sensor that detects any sponges left inside the body.

IU Health spends about $275,000 a year to equip its three Indianapolis hospitals with the tracking technology, including the annual cost of the tagged sponges — an average of about $8 per surgery.

IU's hospitals have not had a single lost-sponge case in the five years since they adopted the tracking technology, Bridgewater says. It has led to several "saves," including a case where the scanner turned up a sponge in a patient after sponge counts showed that everything had been retrieved.

"At first, we had some skeptics (about the technology), but now people here would never want to do a surgery without it," Bridgewater adds.

**RISKS OF COUNTING ADD UP**

It's no secret that sponge counts aren't reliable.

A 2008 study led by researchers at New York's Mount Sinai found that sponge and instrument counts were effective 77% of the time in identifying cases where items were left behind. A separate study published the same year by doctors at Minnesota's Mayo Clinic found that counts failed to show anything amiss in 68% of cases where a sponge was lost.

"When you're counting multiple objects over a longer course of time, such as an operation, and you have significant competing priorities and tasks that need to be done, as well as multiple people coming in and out to perform those tasks, you're going to have errors," says Robert Cima, the Mayo Clinic surgeon and professor who led the study.


Hospitalizations involving a lost sponge or instrument average more than $60,000, according to data compiled by Medicare. These high-tech sponges are equipped with inventory bar codes. Alternatively, radio-frequency tracking devices, such as those lying atop the sponges, can be embedded.(Photo: Evan Eile, USA TODAY)

Some studies have found that lost sponges are more likely in surgeries performed under hectic conditions, such as emergency trauma or operations with unexpected complications. Others have suggested that the risks of leaving a sponge behind are greater in operations on obese patients with larger abdominal cavities — the most common surgical site for lost sponges.

When doctors suspect a sponge has been lost, they often look for it on X-rays, but that typically doesn't happen unless a sponge count shows a discrepancy. Even then, a lost sponge can be difficult to spot, the Mayo study and others have found.

"There is a problem with detecting these cases once they occur," Cima says. "There are numerous case reports where patients don't present (symptoms) for months, years, sometimes decades."

Years ago, the Mayo Clinic began requiring post-operative X-rays in every patient, regardless of what sponge and instrument counts showed. But those scans weren't done until patients were closed up, so another surgery would be needed to retrieve any items that were spotted, Cima says. To avoid such surgeries, the hospital adopted one of the new sponge-tracking technologies, a system where each sponge has a unique bar code that is scanned before and after it goes into a patient.

The result? Mayo hasn't had a lost sponge case in almost four years.

**A LONG TIME SUFFERING**

When Lenny LeClair's stomach started acting up in the spring of 2006, he figured he had a routine bug; his doctor's office in Florida recommended antacids and laxatives.

Over the next couple of weeks, the pain in his gut became excruciating, and his non-stop vomiting began to have what seemed like a fecal odor. When relatives dropped by to visit, LeClair's 6-foot-1 frame looked so wasted that they hauled him to a doctor, who ordered an immediate CT scan.

The images showed several sponges embedded in LeClair's intestines, left behind from a surgery he'd had the year before to treat a digestive disorder.

"It never crossed my mind that the problems I was having could have been related to the surgery," says LeClair, 43. "I'd been fine for months. I thought that was all over."

Over time, the sponges had fused to LeClair's intestines, causing infections that ultimately chewed through his colon. He needed repeated surgeries to remove parts of his intestine and reroute what was left, then spent weeks in a medically induced coma during his recovery. He'll spend the rest of his life with a plastic pouch attached to his abdomen to catch his waste.

"I still get wicked pains in my stomach from the scar tissue, and the scars on the outside are so bad, I can't ever go swimming or go to the beach or anywhere I'd take my shirt off," he says. "I've always been a happy guy, but every day is a struggle now. Some days, I just can't let go of it."

Now living in New Hampshire, LeClair received a six-figure settlement, plus legal and medical expenses, after filing a malpractice suit. But little of that money remains, he says, because he has lost his insurance and faces ceaseless medical bills for drugs and follow-up treatment.

Erica Parks, foreground, developed a life-threatening infection after her C-section. Scans detected a washcloth-size sponge.(Photo: Shawn Spence for USA TODAY)

"I'm happy to be alive," he says, "but I wouldn't wish this on my worst enemy."

**MANY CASES, FEW CHANGES**

There's no telling precisely how many victims are out there.

More than half of the states require reporting of medical errors, including lost surgical items, but a 2012 study by the inspector general for the U.S. Department of Health and Human Services found hospitals reporting just 1% of the events they were supposed to record in those states. National estimates of about 3,000 cases a year are based on hospital billing records analyzed by the Agency for Healthcare Research and Quality, but experts believe many cases aren't captured in those records.

"There's a lot of potential for under-reporting," says Jeffrey Hageman, an epidemiologist at the Centers for Disease Control and Prevention. Some hospitals may be reluctant to document cases "because of legal ramifications," he adds. "And there's also the amount of time between the surgery and the discovery of the problem," which makes it tough to know when — or where — the mistake happened.

Three major studies since 2008 have concluded that sponges and other items are lost in anywhere from one in 5,500 surgeries to one in 7,000 surgeries. With federal data showing 32 million

invasive surgeries nationwide each year, that yields 4,500 to 6,000 cases a year as the actual incidence rate. Studies suggest that 1%-2% of those cases prove fatal.

"One (lost item) in 5,000 operations or so seems like pretty terrific performance, but when we're doing tens of millions of operations a year it's not nearly good enough," says Gawande, the Boston surgeon, who authored a landmark study on lost surgical items in 2003.

Sponges are the biggest problem, accounting for about 70% of lost surgical items (needles account for less than 10%; instruments about 5%). And the available sponge-tracking technologies — both the bar code and radio-frequency detection systems — are an obvious solution, says Gawande, whose hospital uses bar codes.

"Whatever system people use, these technologies cut down the risk that sponges are left in a patient almost to zero," he adds.

But the systems remain rare in U.S. operating rooms.

USA TODAY surveyed the manufacturers of all three sponge-tracking systems approved by the Food and Drug Administration. Combined, they have sold their tracking technologies to fewer than 600 hospitals — a small fraction of the nearly 4,200 that perform surgery nationwide.

"It's still an emerging trend," says Victoria Steelman, an assistant professor of nursing at the University of Iowa and author of a recent study on retained surgical items for the Association of periOperative Registered Nurses. "Is it happening fast enough? Not in my opinion."

**MAKING A CASE OVER COSTS**

When hospital officials at University of North Carolina Health Care decided on a radio-frequency detection system for surgical sponges, the big hurdle was costs — and the way they're calculated.

"We had to find savings to offset the expense," says Susan Phillips, UNC Health's vice president of perioperative services.

Phillips, who pushed for the tracking system after two lost-sponge cases emerged at UNC's hospitals, says the strongest justification was improved patient safety, but the potential to cut liability costs was a major consideration. The technology "pays for itself (if it stops) just one error," she adds, noting that UNC has not identified a single lost-sponge case since adopting the technology in 2011.

But Phillips couldn't factor those savings into the equation because legal fees and other costs tied to medical errors don't typically come out of a surgical department's operational budget. Phillips had to offset the new system's expense — about $300,000 a year, averaging just over $10 each for the hospital's 29,000 annual surgeries — by cutting other medical supply costs.

It's a common refrain: The best argument for sponge-tracking systems is the one that often can't be used — that they can save a lot of money in the long run.

There's little research on the costs hospitals incur for follow-up treatment and surgeries tied to lost sponges — the $60,000-plus estimate from Medicare was generated in 2008, when the program decided to stop reimbursing hospitals for certain expenses tied to such problems. But there's plenty of research suggesting that liability costs might be the biggest consequence.

A 2009 study in the journal *Surgery* put the average malpractice costs for a lost sponge at $150,000, including both awards and legal defense fees, but noted that the figure could be much higher in some parts of the country.

Many hospitals considering sponge-tracking technologies "do an incomplete cost analysis and just look at the raw cost of the supplies," Steelman says. "The facilities that consider all the costs related to preventing retained sponges are finding that there is a cost savings."

Still, the biggest obstacle to wider use of sponge-tracking systems may be that so many lost-sponge cases are not detected or tracked to the responsible doctor or hospital.

"There's an element of human nature where until someone has a retained-sponge case, that person might not feel vulnerable — and they should," Steelman says. "If we have to wait for every surgeon to personally experience this before it's considered a problem, we will have injured many, many patients."