

# HEALTH: FIGHTING HOSPITAL INFECTIONS

[BROBSON LUTZ, M.D.](#) [CHERYL GERBER PHOTOGRAPH](#)

Dr. Ronald Lee Nichols has spent his career studying what many would prefer to hide – a profession’s dirty laundry. A transplant to New Orleans from the North, Nichols is the Emeril Lagasse of surgical infections. His entertaining presentations to medical students at Tulane and to medical audiences all over the world are delivered with a booming voice, pleasantly minus the “Bam.”



All hospital patients are at risk for health care-associated infections. According to the Centers for Disease Control, there are 1.7 million health care-associated infections each year in the U.S. These infections fuel increased patient morbidity and mortality. They consume expensive health care resources and cause an estimated 99,000 excess deaths each year. Most health care-associated infections target the urinary tract where bacteria creep inside the body from an inserted catheter used to ensure proper urine drainage. Next in frequency are surgical site infections followed by pneumonias and bloodstream infections.

Nichols, a perennial presence in the Best Doctors of America and New Orleans Magazine’s list of Top Doctors, is precise in his terminology. The term for infections associated with surgical procedures changed from surgical wound infection to surgical site infection more than 10 years ago. Nichols published his first study looking at surgery related infections in 1982.

“The incidence of infection varies from surgeon to surgeon, from one surgical procedure to another and most importantly, from one patient to another,” Nichols wrote recently, adding that the most critical yet most difficult factors to quantify are the sound judgment and proper technique of the surgeon and his staff as well as the underlying general health and condition of the patient.

Although unproven, the greatest risk for postoperative infection appears to be the patients themselves, Nichols wrote. Patient characteristics that appear to be associated with an increased risk of surgical site infections include diabetes, cigarette smoking, systemic steroid use, obesity, old age and poor nutritional state. “Other factors that are implicated in influencing the risk for infection include length of preoperative stay, coexistent infections at a remote site, preoperative bathing and preparation of the surgical site,” he added. “The most effective strategy developed during the past four decades for the prevention of surgical site infections has been the proper use of perioperative prophylactic antibiotics.”

If a couple hours lapse between infusion of the antibiotic and the operation, tissue levels of the antibiotic are too low to be effective during the operation. On the other hand, excessive prophylactic antibiotics beyond 24 to 48 hours after surgery don’t reduce surgical site infections and can actually encourage the colonization of resistant bacteria. This means giving an effective dose of the correct antibiotic within one hour of the surgical incision.

“The former practice of giving the antibiotic ‘on call’ to the operating room frequently meant that it was administered three to four hours before the incision was made,” said Nichols. If the drip is started by a floor nurse before the patient is rolled into the surgery area, any sort of delay reduces the effective level of antibiotic at the time of the operative incision. The anesthesiologist has emerged as the go-to person to coordinate proper pre-operative administration of the first dose. For prolonged procedures, a second dose during the surgery is often needed.

Hand washing is a common target in campaigns to reduce health care-associated infections. Obviously, hand washing in the medical profession is a sacred tenet but staffing shortages and process problems are the more likely root causes of avoidable infections. When specific factors are independently studied, the upshot is less attention to the patient and the environment.

“I had abdominal surgery and was appalled that I had to remind the nurses over 50 percent of the time to use sterile technique when accessing my IV line,” says a prominent local neurologist who underwent laparoscopic surgery this past summer in an area hospital.

“On my first night out of the ICU, there weren’t enough staff on the hospital floor to take care of me. My anti-embolus device kept coming off. I had to call my housekeeper to spend the night in the room to help me stand up to urinate and to watch things in general. I was in the hospital five days and not bathed once,” assails the physician turned patient.

Hand washing has fueled the use of health care acronyms. Recently a part-time hospital epidemiologist from New Orleans queried an infectious disease listserv to see if any hospital had received a RFI from JCAHO concerning a reasonable MOS in regard to hand hygiene compliance.

Most physicians know that JCAHO refers to the old name for The Joint Commission, which is the organization that inspects, accredits and certifies health care organizations and programs. I just learned though that a RFI was a “request for improvement” and a MOS was a “measure of success.”

"We attempted to capture information by collecting empty soap and hand sanitizer containers. We found some employees took them home, patients took some of them and I personally retrieved several from the trash. We finally dropped the program," says Dr. Francis Riedo from Kirkland, Wash.

"Having secret observers seemed our best solution and actually dramatically increased compliance ... Access to the hand sanitizer is important. Note that we have a bottle of hand sanitizer in each room, between rooms in the hallway, in every bathroom and on almost every counter top," he adds.

Most doctors don't share the enthusiasm fraught in such spy programs as there are no data proving that such measures truly reduce patient infections in today's hospitals. An infectious disease physician recently wrote in *The Journal of Infectious Diseases* that "where data are weak, opinions are strong."

"I am wondering if JCAHO has anything better to do than develop clever/silly abbreviations?" e-mails Dr. Del DeHart from Michigan State University in an animadversion echoing the sentiments of most physicians actively engaged in patient care on a day-to-day basis.

### **Preventing surgical site infections**

Cigarette smoking impairs wound healing and increases the chance for a postoperative infection. Stop smoking at least 30 days prior to any elective surgery.

Keep preoperative stay in the hospital as short as possible.

Patients should shower or bathe with an antiseptic agent the night before surgery.

Do not shave the operative site. If hair around the incision site needs to be removed, use electric clippers immediately before the surgery.

Any preoperative antibiotics should be administered by the anesthesia staff in the Operating Room to ensure that bacteria-killing tissue levels are present when the incision is made.

Protect the surgical site with a sterile dressing for at least one to two days after surgery. Wash hands before and after dressing changes or with any contact with the surgical site.

Source: Current Strategies for Prevention of Surgical Site Infections by Ronald Lee Nichols, MD, and Infection Control in Health Care Settings at [www.cdc.gov/ncidod/dhqp](http://www.cdc.gov/ncidod/dhqp).

### **Surgeons make local call**

The American College of Surgeons is holding its annual Clinical Congress at the Morial Convention Center, Oct. 7-11, 2007. This is one of the largest international meetings of surgeons in the world.

A special session Oct. 10 will describe how Hurricane Katrina disrupted postgraduate surgical training in New Orleans and describe how Tulane's urology department was able to maintain uninterrupted resident education for its trainees.

The American College of Surgeons was founded in 1913 to raise the standards of surgical practice and to improve the care of the surgical patient. It has more than 71,000 members and is the largest organization of surgeons in the world.

Source: [www.facs.org](http://www.facs.org).