CDC updates SSI guideline for the first time in 18 years

In May 2017, the CDC released its new guideline for surgical site infection (SSI) prevention, the first such update since the turn of the century.

Between 2006 and 2009, roughly 1.9% of surgical procedures in the United States resulted in SSI complications; however, it’s likely that number is much higher since about 50% of SSIs don’t become evident until after discharge. Estimated costs of SSIs range from $10,443 to $25,546 per infection, although it can cost more than $90,000 to treat an SSI involving a prosthetic joint implant or an antimicrobial-resistant organism.

“There is increasing demand for evidence-based interventions for the prevention of SSI,” wrote lead author Sandra Berrios-Torres, MD, in the guideline. “The last version of the CDC Guideline for Prevention of Surgical Site Infection was published in 1999. While the guideline was evidence informed, most recommendations were based on expert opinion, in the era before evidence-based guideline methods.”

Answering the call of healthcare professionals, the CDC updated the guideline using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) process to condense thousands of studies into 170 high-quality trials. The results were then categorized by the strength of the evidence supporting them.

The news was published in JAMA Surgery and includes an accompanying editorial.

“The [updated] CDC guidelines use a strict process for literature review, development of consensus, public reporting, and refinement of their final recommendations,” wrote Pamela A. Lipsett, MD, MHPE, MCCM, in the accompanying editorial. “The article from the CDC by Berrios-Torres et al in this issue of JAMA Surgery is useful to every surgeon because it is brief and summarizes the recommendations, with their level of support. It tells us what we should do and what we do not know. The supplementary material is inclusive and recommended for anyone with a thirst for the evidence supporting these recommendations.”

Peggy Prinz Luebbert, MS, CIC, CHSP, CSPT, an infection prevention and healthcare safety professional and consultant, says that having guidance based on expert opinion rather than evidence is par for the course in our society right now. It’s difficult and expensive to scientifically validate medical recommendations, which unfortunately means physicians often have to depend on opinions. That’s what makes the CDC’s update such a breath of fresh air.

“I’d say it’s easier for us to present information to our surgeons when the science is there and has been validated,” she says. “Unfortunately, that’s so difficult to do. It’s going to be hard unless time and money are put in by either private parties or the government to be able to [do the research and] get the validation we need. So we’re not going to see very many [of these kinds] of updates.”

Sherry Goldstein, MA, BSN, RN, CNOR, principal consultant at Compass Clinical Consulting, says that research-based recommendations promote the ideology of high reliability and hopefully will make an impact on SSI rates.

“Healthcare today too frequently harms and routinely fails to deliver its potential benefit,” she says. “The concept of high reliability is attractive for healthcare, due to the complexity of operations and the risk of significant and even potentially catastrophic consequences such as preventing costly SSI and preventing patient death.”

In addition to reducing SSI rates, Goldstein says the update will also generate physician support in following AORN and CDC guidelines in surgery. She also hopes it’ll give patients more confidence in their surgeons.

What changes?

Luebbert notes that a lot of what’s in the guidelines have been long-standing parts of SSI literature. In fact, many of the recommendations are already standard practice for some facilities. The update, she says, is a case of the agency “writing down what people should’ve already been doing.”
Some of the updated CDC surgical site infection (SSI) recommendations include:

- Patients should shower or bathe (full body) with soap (antimicrobial or nonantimicrobial) or an antiseptic agent on at least the night before surgery
- The appropriate parenteral prophylactic antimicrobial agents should be applied before skin incision in all cesarean section procedures
- Antimicrobial prophylaxis should be administered only when indicated and timed such that a bactericidal concentration of the agents is established in the serum and tissues when the incision is made
- Skin prep in the operating room (OR) should be done with an alcohol-based agent unless contraindicated
- For clean and clean-contaminated procedures, additional prophylactic antimicrobial agent doses should not be administered after the surgical incision is closed in the OR, even when a drain is being used
- Topical antimicrobial agents should not be applied to the surgical incision
- During surgery, glycemic control should be implemented using blood glucose target levels less than 200 mg/dL
- Normothermia (i.e., normal body temperature) should be maintained in all patients
- For patients with normal pulmonary function undergoing general anesthesia with endotracheal intubation, increased fraction of inspired oxygen should be administered during surgery and immediately after extubation in postop
- Blood transfusions should not be withheld from surgical patients as a means to prevent SSIs

“I think for any facility that’s tried to keep up and be progressive with the information that’s out there already, there’s nothing unexpected here,” she says. “If they’ve been progressive enough with their surgeons, they’d have implemented many of these things already. It’s just validating some of the things that have been documented in the literature as CDC guidelines.”

For example, the recommendation to use triclosan-coated sutures for the prevention of SSI validates the outcomes that surgeons have observed for years now.

One of the most interesting changes, though, will be the recommendation against postoperative antimicrobial prophylactic during drain use. Luebbert says that advice goes against the habits of many surgeons.

“Surgeons still have a hard time, particularly if they put in an implant, to not give an antibiotic postop,” she says. “They still like to be able to give at least that one dose after. And this [prophylactic standard] is a Category 1A; the strongest recommendation with high-quality evidence.”

She does note that the guidelines have several gaps, with little or no information on problems facilities deal with on a daily basis. One example is that there aren’t any recommendations on the proper use of orthopedic surgical space suits or other types of PPEs.

“I still have some docs—and I see them all across the U.S.—who still like to wear their orthopedic surgical space suits, and would have been nice to have received some guidance on that,” she says. “I’m sad there’s not more information available on that.”

Another problem facing surgeries is what to do about beards in the operating room (OR). The update says nothing about whether surgeons need to cover their beards when operating to prevent hair from falling into the operating area.

“There’s so many guys now wearing beards,” she says. “We make them cover the tops of their heads, but do we need to make them cover their beards during surgery as well? [The Association of periOperative Registered Nurses (AORN)] says, ‘Yes, you should cover them,’ but surgeons will question whether that’s necessary or not because there’s been no study out there that validates that beards will increase a patient’s risk of infection.”
Even the CDC guideline references its shortcomings.

“The number of unresolved issues in this guideline reveals substantial gaps that warrant future research,” Berríos-Torres wrote. “A select list of these unresolved issues may be prioritized to formulate a research agenda to advance the field. Adequately powered, well-designed studies that assess the effect of specific interventions on the incidence of SSI are needed to address these evidence gaps. Subsequent revisions to this guideline will be guided by new research and technological advancements for preventing SSIs.”

Following the recommendations

Goldstein says that with this update, the guidelines will become more binding than they already are with CMS and other accrediting organizations.

“I expect that the CDC’s 2017 guidelines will be even more robust in next year’s Joint Commission standards and elements of performance in the Infection Prevention and Control section for maintaining accreditation,” she says.

She also notes that the 1999 SSI guideline was instrumental in the development of AORN’s Recommended Practices and Guidelines. Since AORN has followed the CDC guidelines previously, she anticipates it will adopt the 2017 revisions in its 2018 Guidelines for Perioperative Practice.

“The fact that the original recommendations have been vetted as evidence-based from research gives great strength to supporting and the continued use of the CDC’s recommendations as a clinical practice benchmark,” Goldstein says. “There needs to be future research on the other guidelines from 1999 not covered in the 2017 update.”

Luebbert says that her understanding is The Joint Commission will expect clinics and hospitals to review and implement the CDC guidelines. Otherwise, they’ll be expected to justify why they didn’t with a risk assessment.

“I wish they would come with more [updates],” she says. “And maybe now that infections are going to cost hospitals money, we may see more and more time and money put into research to validate practices to decrease infections. That’s what I’m hoping.”

Three keys to preventing workplace violence

This spring, Ann Scott Blouin, RN, PhD, FACHE, executive vice president of The Joint Commission, wrote a blog post detailing the need for a practical approach to healthcare’s endemic workplace violence (WPV) problem.

In 2013, more than 70% of the 23,000 significant injuries resulting from workplace assault happened in healthcare and social service settings. In 2014, a survey found that 76% of nurses have experienced verbal or physical abuse from patients and visitors. And in 2015, data published by the International Association for Healthcare Security and Safety discovered a 4% rise in hospital assaults, from 7.8 assaults per 100 beds in 2014 to 8.1 the following year.

“Incidents of workplace violence are increasing in many healthcare settings, but hospital workers are especially vulnerable to aggressive behaviors,” wrote Blouin.

“It stands to reason. After all, especially for nurses or physicians, we’re the ones sometimes delivering upsetting news to patients and families,” she continued. “For nurses like myself, it’s a sad fact that violence has unfortunately become more common.

“If there’s one thing we can do today, it’s to identify the things that make our emergency departments high-risk and proactively develop solutions.”

– Lisa Wolf

In fact, many of The Joint Commission’s Office of Quality and Patient Safety staff are registered nurses and are all too familiar with the reality of a patient or