Winning against SSI readmissions

The new federal Partnership for Patients, rolled out in April 2011, seeks to save 60,000 lives over the next 3 years by stopping millions of preventable complications and injuries. Part of the goal is reducing hospital readmissions by 20% by the end of 2013 over 2010 levels.

Surgical site infections (SSIs) are one of the 9 areas of focus. Infections, including SSIs, are a major source of readmissions. A report from Pennsylvania finds patients who developed infections in the hospital were nearly 5 times more likely to be readmitted, with the highest readmission rates in older patients and in patients who had surgery.

Pennsylvania hospitals are working to control SSIs with measures such as screening patients for methicillin-resistant Staphylococcus aureus (MRSA), preoperative washing with chlorhexidine gluconate (CHG), and ensuring appropriate antibiotics are administered at the correct time before surgery.

OR Manager spoke with OR managers and infection preventionists at 3 Pennsylvania hospitals who have made strides in reducing their SSI rates.

Award-winning effort

The Penn Presbyterian Medical Center in Philadelphia won the 2010 Delaware Valley Patient Safety Award for its successful approach to decreasing orthopedic SSIs in joint replacements.

Through a multidisciplinary working group, the hospital conducted 4 initiatives. In the 12 months after implementation, hip arthroplasty deep SSIs were reduced by 66%, and knee arthroplasty rates were down by 80%.

Penn Presbyterian improved its 30-day SSI rates for total hip replacements from 1.2% in FY2008 to 0.4% in FY2009. For the first 10 months of FY2010, the deep incisional-SSI rate dropped to 0.2%.

That’s compared with the Centers for Disease Control and Prevention’s National Healthcare Safety Network (NHSN) 30-day total hip SSI rates of 1.35% to 2.2%.

For total knee replacement, Penn Presbyterian improved from 0.7% in FY 2008 to 0.1% in FY2009, compared with the NHSN 30-day rates of 0.77% to 1.63%.

The medical center has an orthopedic surgery volume of some 5,500 cases per year with 1,200 to 1,800 total joints. Orthopedics is about 45% of the total cases.

Stakeholders at the table

The multidisciplinary approach was key, says Steve Chapman, MS, RN, nurse manager of the OR.

“All of the stakeholders were at the table. They made the decisions, and we followed through and closed the loop,” says Chapman. “It’s just good, fundamental practice.”

The working group included directors of the OR and perioperative services and the
chief of orthopedic surgery along with the orthopedic surgical staff and nurses, hospital epidemiologist, infection preventionist, director of central processing, and chief of anesthesia.

New initiatives

The initiatives included:

• Training OR staff on the basics of aseptic technique, maintaining sterility, and standardization of skin site preparation. A back-to-basics education program was provided for all OR and sterile processing personnel covering skin preparation, maintenance of the sterile field, sterile technique, and hand hygiene.

• Adopting a CHG-based skin antiseptic for skin site preparation. The standard surgical skin prep was changed to CHG for all joint replacements, which required developing a new OR process for skin preparation.

Changing from iodine to CHG was not difficult for the orthopedic surgeons once they saw the data presented by the working group and fellow cardiac surgeons who had exceptional outcomes with an earlier change to CHG, notes Chapman.

• Educating patients on CHG bathing before surgery. Patients are instructed to shower at home the night before surgery with a CHG product available over the counter.

A second step has been added requiring every total joint patient to receive a total body wipe-down with CHG wipes when admitted for surgery. If there is not time for the wipe down in admissions, it is done in the preoperative holding area.

At first, only the surgical site was wiped, but the orthopedic surgeons expanded this to the full body, as the cardiac surgeons were doing for their patients.

“IT’s a nominal expense compared to the expense of an infected total joint,” notes Chapman.

• Adding vancomycin to the preoperative antibiotic regimen and optimizing timing of preoperative antibiotics. Vancomycin was added to cefazolin as the standard antimicrobial prophylaxis for all joint replacements because of the frequency of MRSA postoperative infections.

The addition of vancomycin required a significant change in the process because vancomycin has to be infused over 1 hour, says Chapman.

New order sets had to be developed and implemented, and the staff had to be educated about starting vancomycin before the patient arrived in the OR suite.

Surgeons were advised to make sure the antibiotics had completely infused at least 15 minutes before making the incision to optimize tissue levels of antibiotics at the incision site.

Getting to zero on immediate use sterilization

St Mary Medical Center in Langhorne, Pennsylvania, decreased its overall SSI rate by 36% from 2009 to 2010 with more than 20 initiatives, bringing the SSI rate to less than half the state rate—2.31% vs 5.16%. Total savings in 2010 from reducing SSIs was $450,710. The hospital has 16 ORs and large orthopedic and cardiac services.

“The largest initiative we undertook and the greatest challenge was going to a zero flash sterilization policy,” says Karen Benedict, MSN, RN, CNOR, director of surgical services. (Flash sterilization is now termed “immediate use sterilization.”)

The rate, which was 4% in July 2010, is currently 0.009%. (The rate is the percentage of immediate-use loads compared to the total number of sterilized loads for the month.) For example, in January 2011, the rate was 6 loads out of 1,496 loads, or 0.004%.
Countering pushback

There was pushback from surgeons and nurses who were concerned that the policy would slow cases, and they wouldn’t have the instruments they needed, says Benedict. To counter this, the OR added 5 trays of instruments to each service at a cost of around $40,000.

Even then, the staff resisted. What made the difference, she says, was changing from saying, “You can’t flash” to “You can flash, but you have to explain to me or someone on the zero-flash team why an instrument or instruments have to be flashed.”

In the beginning, Benedict says the staff would call on her to hear their explanation. But once surgeons and nurses found it took longer to explain than to get another sterile instrument, she says the resistance went away.

Restricting attire, traffic

St Mary also adopted a strict scrub clothes policy. Only hospital-issued and hospital-laundered scrubs are now worn in the OR, and scrubs cannot be worn outside the hospital. Cloth caps are no longer allowed, and all hair has to be covered. Jewelry cannot be worn.

“We went back to a strict personnel attire policy, and we have stuck to that,” says Benedict.

To limit traffic during procedures, the cardiovascular and orthopedic services started putting yellow caution tape across their doors. Staff in those rooms must leave the OR through a door in the substerile room.

In another change, fewer patient beds are being brought into the OR in an effort to minimize equipment from outside the restricted area. Previously, surgeons wanted inpatients to be transferred to their beds after surgery. The staff now asks the surgeon if there is a therapeutic rationale for bringing the bed into the OR. If not, the bed is not brought in.

MRSA screening, CHG wipes

In January 2011, St Mary started MRSA screening for all surgery patients. Patients are screened during preadmission testing, and physicians are notified if patients are positive, notes Dawn Rumovitz, MSN, RN, CIC, infection control manager. Patients who are MRSA positive have their charts flagged preoperatively to assist with prophylactic antibiotic selection and timing.

CHG wipes have been added to the preoperative protocol for all procedures except those on the face and mucous membranes. Patients are instructed to shower the night before surgery and wipe the surgical site with the CHG wipes. On the day of surgery, nurses in the preop holding area wash the surgical site again with the wipes.

It is the surgeon’s preference whether to use CHG or iodine for the surgical skin prep, but Benedict says there has been a trend toward CHG.

Small hospital cuts SSIs, readmissions

Tyrone Hospital, a 25-bed critical access hospital in the central-Pennsylvania town of Tyrone, cut its SSI rate in half from 0.81% in 2009 to 0.38% in 2010 after instituting CHG wipes as part of its preoperative protocol.

When patients come to the preop clinic, they are given the wipes and instructed to use them the night before and morning of surgery, says Terry Waple, RN, patient
care manager for surgical services. If patients don’t have time to use the wipes on the morning of surgery, the nurses in the same-day surgery unit perform the wipe.

Readmissions for SSIs also fell by almost half from 9 in 2009 to 5 in 2010. Three of the 5 SSIs were MRSA infections, and those patients were colonized before surgery, notes Beth Carey, LPN, CIC, the infection prevention coordinator.

The hospital, which has a large orthopedic program, began screening orthopedic surgical patients for MRSA on admission in 2008. Patients are screened 1 week before their day of surgery, so the appropriate antibiotic can be given.

“We found that quite a few patients were colonized with MRSA at the time of admission, and we wouldn’t know it for 24 to 48 hours when the report came back,” says Carey.

The hospital is looking at expanding screening to all surgical patients because there is a large volume of MRSA-colonized individuals in the community.

The hospital also is changing to all single-patient rooms. The hospital has 2 ORs with a surgical volume of about 1,300 cases.

“Don’t Bug Me”

A hand hygiene “Don’t Bug Me” campaign is making a difference throughout Tyrone Hospital. Every department has a hand hygiene champion who monitors personnel hand hygiene.

Hand sanitizers are visible and accessible throughout the facility, such as near the elevators.

“I have watched physicians get off the elevator, see the hand sanitizer, and use it,” says Carey. “Everyone’s awareness has been raised, and it is changing the culture.”

—Judith M. Mathias, MA, RN