Despite evidence that proper use of antimicrobials prevents postoperative infections, it's a challenge to set up a system to ensure antibiotics are used properly. Christiana Care Health System in Newark, Del, formed an interdisciplinary committee to develop an antimicrobial prophylaxis protocol in January 2004. The goal was a protocol that made it easy for surgeons to order the appropriate antibiotics based on national standards.

At first, a generic order based on the recommended antibiotics seemed like the answer. The surgeons could just check a box that said: “Institute surgical prophylaxis.” A nurse and pharmacist would then use a checklist to identify the planned procedure and which antibiotics should be given according to the protocol.

But this approach didn’t improve compliance. Many surgeons were opposed because they thought someone else was ordering their antibiotics for them. Leaders went back to the drawing board and came up with an approach using standard orders, which has been more successful.

The project started with formation of an interdisciplinary team to develop the antimicrobial prophylaxis protocol.

Choosing the appropriate drug

“We did not have an official protocol in writing on prophylactic antibiotics before this group started meeting,” Mary Cay Curran, MSN, RN, CAPA, perioperative clinical practice coordinator, told OR Manager.

The committee developed the protocol as part of the hospital’s Care Management Guidelines, which are care paths followed by physicians and nursing staff. In writing the protocol, the committee used the surgical procedures suggested by the National Surgical Infection Prevention Project, as described by Bratzler and colleagues.

Christiana later expanded the protocol to include all patients undergoing surgery. “We realized that if we were going to have the same standard of care for all patients, we had to expand the protocol,” says Curran.

The infection control department and pharmacy developed recommendations for the appropriate antibiotics and sent them to the surgical specialty sections. They also asked the surgeons what they were routinely using and what their professional organizations recommended.

Because the protocol is a care path, it doesn’t supersede individual surgeon’s decisions. “If for some reason, the surgeon disagrees with the drug selection for a patient, the surgeon can prescribe the drug he or she thinks is best,” says Judith Townsley, RN, MSN, CPAN, perioperative director of clinical operations.

For the most part, the surgeons went along with the recommendations, but some specialties made changes because of recommendations from their professional societies.

Beta-lactam allergies

The biggest issue was use of vancomycin and clindamycin for beta-lactam allergies. Many of the surgeons used clindamycin as the drug of choice. But the infection control department recommended vancomycin instead because of the number of patients with methicillin-resistant Staphylococcus aureus (MRSA).

“The surgeons thought they were doing a good thing by not overusing vancomycin, but infection control pointed out that because the organization had a number of patients with MRSA, it is best overall to use vancomycin,” says Curran.
Garnering surgeon support

Based on feedback about the generic order approach, the committee chose instead to use a 1-page sheet of standing orders, which lists the drug of choice and drugs to substitute if the patient is allergic to the drug of choice for each specialty. There is a space to write an alternative drug if the surgeon chooses.

There has been more support for the new protocol since the standing-order form was developed. About 90% of the surgeons now order prophylactic antibiotics according to the protocol guidelines, says Townsley.

She sent thank you letters to the physicians who comply with the protocol and order set.

“It is important to recognize those physicians who are dedicated to delivering excellent care to patients receiving services at Christiana Care Health System,” she says.

Outliers are surgeons who have been using the same antibiotic for years, say they have not had any infections, and do not want to change.

Start & Chart

For timing and duration of administration, the committee followed the Centers for Medicare and Medicaid Services (CMS) recommendations that antibiotics be:

- given 0 to 60 minutes before surgery
- discontinued within 24 hours after surgery. The committee came up with the phrase “Start & Chart,” to help ensure the antibiotic is started before the patient leaves the holding area. A bright orange laminated sign on the wall of the holding area reminds anesthesia providers to start the antibiotic and chart the time.

Monitoring the protocol

The protocol is monitored in 2 ways.

- Christiana’s OR is required by the state’s Medicare quality improvement organization (QIO) to report on the 3 performance measures of appropriate antibiotic, appropriate timing, and discontinuation of antibiotic within 24 hours.
  
  One person audits all charts after patients are discharged and fills out forms for the QIO, which gives the organization a score. The score is available to the public on the Department of Health and Human Services web site.

- Curran also does her own proactive audit for the OR’s process improvement statistics.

  “If I identify an issue, we can make a change quickly and not wait for the QIO audit,” she says. For example, in February 2005, cefotetan, the drug of choice for gynecologic and colorectal surgery, was no longer available. The committee recommended that these specialties change to an alternative, cefoxitin. But the organization’s supplier ran out, so the pharmacy made an automatic substitution to cefazolin and metronidazole. Because Curran was doing her own audit, she was able to communicate the substitutions and administration timing to surgeons and anesthesia providers quickly.

  The perioperative services executive leadership is key to implementing the protocol, Townsley says.

  “The team is focused on improving clinical excellence for all patients who require our services.”

—Judith M. Mathias, RN, MA

References


Making headway on SCIP measures

This article is the first in a series focusing on the Surgical Care Improvement Project (SCIP).
Cosponsored by 10 national organizations, SCIP targets 4 areas:
• surgical site infections
• adverse cardiac events in patients having noncardiac surgery
• venous thromboembolism
• perioperative ventilator-related pneumonia.

SCIP measures

Surgical site infection
SCIP has 7 measures for preventing surgical site infections. This article addresses the first 2:
✓ Prophylactic antibiotic received within 1 hour prior to surgical incision
✓ Prophylactic antibiotic selection for surgical patients
✓ Prophylactic antibiotic discontinued within 24 hours after surgery end time (48 hours for cardiac patients)
✓ Cardiac surgery patients with controlled 6 am postoperative serum glucose
✓ Postoperative wound infection diagnosed during index hospitalization (outcome)
✓ Surgery patients with appropriate hair removal
✓ Colorectal surgery patients with immediate postoperative normothermia.

More information on SCIP is at www.medqic.org/scip.