In ASC QI studies, try, measure, retry

Like surgical facilities throughout the country, Lakeview Surgery Center is striving to make sure patients who have prophylactic antibiotics ordered before surgery receive them on time. Not only is on-time delivery of antibiotics the standard of care, but Lakeview also wanted to be prepared for Medicare’s proposed quality reporting program for ambulatory surgery centers (ASCs). Expected to begin in 2010, reporting has been postponed for at least another year.

Even so, Lakeview, a multispecialty center with 6 ORs in West Des Moines, Iowa, planned to move toward its goal of giving the appropriate antibiotic to 100% of its patients within 60 minutes of surgery. That goal became the focus on an ongoing quality improvement (QI) study. The study is an example of how an ASC can use QI not only to meet accreditation requirements but also for its true purpose, improving patient care. Lakeview’s QI program is built on steps outlined by the Accreditation Association for Ambulatory Health Care (AAAHC) (sidebar).

The QI cycle

An important part of the process, particularly for a goal that needs sustained effort, is to try a set of interventions, measure to see if the improvements made a difference, and if not, try additional interventions and measure again. This QI cycle keeps Lakeview moving toward its target, notes Kate Foreman, RN, Lakeview’s quality coordinator.

Foreman and Lakeview’s clinical director, Rikki Knight, RN, BHS, MHA, described how the study has helped them keep up the momentum.

Topic selection

The QI committee selected antibiotic administration because it wanted to see how close Lakeview was to the 100% goal, says Foreman, who spends half to three-fourths of her 32-hour-a-week position on QI.

On-time preoperative antibiotics are part of the national Surgical Care Improvement Project (SCIP) for hospitals. Physicians also have an incentive for appropriate antibiotic administration under Medicare’s physician quality reporting initiative (PQRI). Because physicians are part owners of Lakeview, that made it easier to get them on board. As an extra incentive for the staff, the center added on-time antibiotic administration to its quarterly employee bonus program.

The center can compare its progress with a national benchmark on preop antibiotics developed by the ASC Quality Collaboration. Data are reported quarterly at www.ascquality.org (sidebar).
Setting the goal

Lakeview’s quality committee set a target that 100% of patients with antibiotics ordered will receive the antibiotic within 60 minutes of their incision, a level they thought was attainable.

Initial measurement

When the study began in 2007, Foreman conducted a retrospective chart review to get a baseline measurement of the center’s performance, using a worksheet she developed.

“We did a randomized audit for all of the specialties, which was quite time-consuming,” Knight says.

Results showed that for the sample, antibiotics were being given on time for 89% of the cases.

Taking action

Lakeview’s first set of interventions included 5 steps (chart, p 27). Among these was concurrent data collection to enable Foreman to monitor what was happening every day. For example, if she notices a patient received the antibiotic 90 minutes before surgery, she can check to see if the antibiotic was repeated before the procedure. A worksheet captures the data as part of a case history for each patient, which is entered in the center’s information system for each day’s caseload.

Close communication needed

To help improve performance, the leaders and staff realized close communication between preop nurses and the OR would be needed. For example, if a case is running late, the OR staff needs to call the preop area to tell the staff to delay giving the antibiotic to the next patient. Managers provided the staff with education on how to monitor the surgical schedule so they can coordinate antibiotic delivery.

Foreman continues to monitor the data and reports results regularly to the staff, medical executive committee, and governing board (chart, p 26).

Continuing the cycle

The initial interventions brought performance to 94%. But more was needed.

As part of a new round of interventions, data on antibiotic administration was reviewed to identify specialties and physicians where on-time delivery was being missed. This tended to happen later in the day when delays occurred.

“Once the staff was aware of the trends, they knew they needed to call the OR to see whether to hold off in giving the antibiotic,” Foreman notes.

With that, on-time delivery moved up to 97%.

As a further boost for compliance, the medical executive committee set up a 1-month trial to have antibiotics sent to the OR to be given by anesthesia providers. The intent was to ensure patients received the antibiotic within 60 minutes of the incision. But some physicians questioned whether that gave the antibiotic enough time to circulate to the tissues. At the end of the trial, the committee decided to revert to having the antibiotic given in the preop area, which means nurses “really have to pay attention to the surgical schedule,” Foreman notes.

Compliance improved to 98% by October 2008.
**Adding a financial incentive**

As an added incentive, leaders added antibiotic administration to the quarterly bonus program for the staff. All employees, whether full-time, part-time, or per diem, are eligible for the bonuses, which are based on 5 measures. Antibiotic administration is the current clinical measure; the other 4 are paid hours per case, net income, patient satisfaction, and days in accounts receivable. Employees receive a bonus based on whether the center meets the minimum, midrange, or maximum level for the measures.

In March 2009, compliance dipped to 96%, which called for another set of interventions. In a new intervention, antibiotics were added to the handoff communication tool for transferring care of patients from the preop area to the OR. The handoff tool is another reminder to make sure the drug is given on time.

Foreman continues data collection, reporting regularly to keep staff and physicians focused on the goal of 100%. The goal also continues to be reinforced in staff and departmental meetings.

"Even if we hit 100% of our quarterly goal, that doesn’t mean we will stop looking at it,” she says. “We have to continue to monitor and remeasure to make sure we sustain the change.”

—Pat Patterson

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**National ASC data on antibiotic delivery**

**Percentage of ASC admissions with antibiotics ordered who received antibiotics on time**

96%


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**On-time prophylactic antibiotics 2008-2009**

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<td>% Initiated within 60 minutes of incision</td>
<td>90</td>
<td>92</td>
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- On-time antibiotics
- Top goal 100%
- Mid goal 99%
- Low goal 98%
Elements of QI activities

Under the Quality Management and Improvement standards of the Accreditation Association for Ambulatory Health Care, a QI activity needs to include at least these elements (summary):

1. A statement of the purpose of the QI activity.
2. Identification of the performance goal against which the organization will compare its current performance.
3. Description of the data that will be collected to determine the organization’s current performance.
4. Evidence of data collection.
5. Data analysis that describes the findings about the frequency, severity, and source of the problem.
6. A comparison of current performance against the performance goal.
7. Implementation of corrective action to resolve the problem.
8. Remeasurement to determine whether the corrective actions have achieved and sustained improvement.
9. If the initial corrective action did not achieve and/or sustain improved performance, implement additional corrective actions and remeasure until the problem is resolved or no longer relevant.
10. Communication of findings of QI activities to the governing body and others as appropriate and incorporation of findings into educational activities (“closing the QI loop”).

Principles of antibiotic prophylaxis

• Delivery of the antibiotic just before incision results in the lowest rate of surgical site infection.
• Select a narrow-spectrum antibiotic that targets the organisms most likely to be encountered for the operation.
• Maintain adequate antibiotic levels in the tissue the entire time the wound is open in the OR.
• For most operations, the standard of care is to give an IV antibiotic prior to the incision.

Source: Surgical Care Improvement Project.
Case example: ASC QI study on preop antibiotic administration

**Topic selection**

*Patient safety*—Prevention of surgical wound infections is an important issue for patients having outpatient procedures or surgery. In cases where the physician has determined that an antibiotic should be given to help prevent surgical wound infection, giving the antibiotic at the right time is important. Research indicates that antibiotics given too early or after surgery begins are not as effective.

*Patient satisfaction*—Increased patient discomfort due to postoperative wound infection.

*Costs*—Increased costs to patients for medications to treat infections as well as time, which are disruptive to patient’s activities of daily living and work lifestyle.

*Incidence*—Antibiotic timing would be tracked to determine if patients are receiving antibiotics on time. We developed facility-level measures of ASC quality. The measures were not limited to a patient population or procedure to allow broad participation and reporting of quality measures. (At the time the study was developed, no nationally endorsed measures for outpatient facilities were found.)

**Initial measurement**

Retrospective chart audit for patients receiving prophylactic antibiotics in February 2007. Our initial measurement for the center was 89%. This was also the most current reported mean measurement for the multispecialty ASCs reporting to our national outcomes monitoring project.

**Goal**

Our goal would be that 100% of patients who have prophylactic antibiotics ordered will receive them on time. We chose this goal because it is important for all of the patients who utilize our center to have the same high quality of patient care.

**Development of intervention**

1. Development of a collection tool that will enable us to collect necessary data but not be too cumbersome for staff so complete data can be obtained.

2. Communication to staff that on-time antibiotics will be one of our measures for quality this year, for both internal measuring and external benchmarking.

3. Track and report information monthly/quarterly to staff, medical executive committee (MEC), and governing board. Identify physicians and cases that are not meeting goal and communicate that to staff.

4. Identify trends through monthly auditing.

5. Inform admitting and OR staff that they will need to communicate with each other, especially if delays are occurring in the OR.

**Remeasurement**

We have noted a gradual upward trend for patients receiving preoperative antibiotics but have not yet reached the center's goal. Review of on-time antibiotic results monthly/quarterly to see if interventions have increased the percentage of patients who receive antibiotics within 60 minutes of incision. By June 2008, our highest score was 94%.

**Development of intervention**

1. It was noted that plastic surgery patients were trending out, so the staff will send antibiotics with the anesthesiologist to the OR for these identified patients.

2. Anesthesia providers will give plastic surgery patients the antibiotics in the OR prior to the start of the case.

3. Reinforce to the staff the importance of communication, especially when delays are identified.

**Remeasurement**

Review of on-time antibiotic results monthly/quarterly to see if interventions have increased our percentage of patients who receive antibiotics within 60 minutes of incision. By October 2008, we had reached 97%.
Development of intervention
1. MEC would like all meds to be sent to the OR for administration by anesthesia to see if compliance can be met as a trial for 1 month.
2. Review monthly status and see if trial was effective.
3. Move administration of antibiotics back to preop area.
4. Include antibiotic time on handoff communication tool being developed by the center.
5. The quality management team and governing board decided to incorporate on-time prophylactic antibiotic administration into the center’s quarterly bonus system.
6. Bonus goals were to have 3 levels of compliance, with the highest payout for quarters in which there was 100% compliance; midrange was 98% compliance, and high range was 99% compliance.

Remeasurement
Review of on-time antibiotic results monthly/quarterly to see if interventions have increased the percentage of patients who receive antibiotics within 60 minutes of incision. By March 2009, we had reached a plateau of 96%.

Development of intervention
1. Utilize handoff tool to meet compliance.
2. Continue to reinforce at staff and department meetings.

Remeasurement
Continue review of monthly audits until goal is met. Revisit after 6 months to make sure goal is met consistently.

Conclusion/follow-up
Ongoing at this time.

Source: Lakeview Surgery Center, West Des Moines, Iowa.