

# Performing effective quality improvement studies

**E**ffective quality improvement (QI) programs can improve clinical, administrative, and financial operations of ambulatory surgery centers (ASCs). But many ASCs don't know where to start or how to complete an effective quality improvement study.

Naomi Kuznets, PhD, director of the Institute for Quality Improvement, a not-for-profit arm of the Accreditation Association for Ambulatory Health Care, Inc (AAAHC) and Gayle Lowe, RN, director of quality standards, ambulatory services, Hospital Corporations of America, Western Division, recommend these guidelines to conduct effective quality improvement studies. Lowe also is an accreditation surveyor and trainer for AAAHC.

## 1. Select a study topic

How do ASCs select useful study topics? Lowe recommends studying obvious problems that can be changed. "In the beginning, go for the obvious concerns," she says. "If this process isn't going to improve your center and raise the quality of patient care, don't waste your time."

Lowe suggests reviewing existing tracking and trending data the center has collected that show weaknesses and areas for improvement.

Consider these issues when choosing a study topic:

- near misses, adverse events, complaints
- repeated mistakes
- a process that is adding excessive costs to the center, patients, and payors
- variations in practice—there is substantial variation in a service your facility provides, or you find that other centers do not practice in the same way
- processes or equipment and supplies that can be changed
- organizational support and participation will be provided for this improvement process.

## 2. Write a problem statement

After selecting the study topic, write a problem statement. Lowe says the statement should include:

- the significant problem or concern to be studied
- the measure that indicated the problem and benchmarking data to show its severity
- the improvement goal.

For example, a problem statement may read: ABC Surgery Center had a marked increase in hospital transfers in the first quarter of 2005: 10 patients in January, 8 patients in February, and 9 patients in March. Benchmarking data show the state's patient transfer average at 8 per quarter. This study will provide a retrospective analysis of patient ASA scores (referring to American Society of Anesthesiologists' physical status assessment tool). The goal is to reduce patient transfers to hospitals to meet or go below the state's average.

## 3. Develop measures

Lowe says choosing the right measure is essential to an effective study. She recommends convening the QI committee to drill down and discover where problems in the system might lie, then measuring those areas. Areas for improvement usually

fall into 1 of 3 categories—clinical, administrative, or cost of care. Consider these aspects to measure:

- **Clinical:** Diagnosis, preoperative testing/indications for procedure, patient prep, anesthesia, procedural technique, procedural equipment and supplies, intraoperative complications, discharge criteria, screening/ testing, followup, patient understanding of disease or disease-related behavior changes, activities of daily living and functional assessment, or adverse events.
- **Administrative:** Surgical scheduling, charting, coding, staff turnover, tracking lab results, patient wait time, satisfaction, followup with referring physician.
- **Cost of care:** Direct or indirect costs, short- or long-term costs, staffing, supplies, facility, market share, or malpractice insurance rates.

Kuznets recommends asking these questions while developing measures and collecting data:

- Are there opportunities for intra and/or interorganizational comparisons and benchmarking?
- How will the center maintain patient and provider confidentiality under the Health Insurance Portability and Accountability Act (HIPAA)?
- Is it necessary to obtain informed consent for the study from patients and providers?
- What data sources will be used, eg, charts, billing records, surveys, computer-based reports?
- Will key people in the organization participate in developing measures?

#### **4. Pilot test measures**

After appropriate measures are chosen, Kuznets recommends pilot testing data collection on a small sample to ensure the measures are clear and easy to collect. “You may need to further qualify or reword your measures to account for factors you hadn’t considered,” Kuznets says.

#### **5. Clean data**

Once the measures have been pilot tested and proven reliable, collect data for a specified period of time, then process it. The duration of data collection depends on the sample size needed.

The next step is to clean data, ensuring it is accurate and complete. “Some centers find they have missing information from charts, or patients did not answer all questions on a survey, or there are values that seem ‘way out,’” Kuznets says. She recommends returning to the data source to get a true value. When that is not possible, she suggests noting and including missing values or outliers when describing results (Step 8).

#### **6. Design and implement interventions**

Lowe says this step often is the most rewarding because it is where change happens. “The study begins after data is collected,” she says. “What you do with the data is the study.”

After analyzing the data and finding opportunities for improvement, the ASC QI committee should ask these questions to determine interventions:

- What are logical actions associated with positive change?
- What ideas evolved while gathering data?
- What actions have other organizations taken to improve in this area?

“Steal shamelessly,” Lowe says. “Quality is all about taking from the best and emulating them.”

An example of designing an intervention would be the case of an eye center that wants to lower its vitrectomy rate after cataract surgery. The data show one surgeon in particular has a high vitrectomy rate. The QI committee decides to send the issue to the medical executive committee for collegial interaction, Lowe says. After discussion, the committee decides to place this surgeon with a proctor for 30 days, then remeasure (Step 7) to document and monitor improvement.

Lowe also uses a technique called a “reverse contingency diagram” to brainstorm for improvement ideas. For a reverse contingency diagram, the QI team lists actions

that will make the problem worse, then rewrites the negative actions into positive statements. For example, if a center wishes to improve patient arrival times, the team brainstorms ideas that facilitate late arrival times, such as poor signage, no day-before-surgery phone call, incorrect or difficult-to-read maps and directions to the facility, unclear or no day-of-surgery patient instructions, and parking lots far from the center. Then the team reverses this list with the positive actions, such as provide clear, large signage; call the day before surgery to ensure patients know what to bring, what to eat, and how to get to the center; provide clear, easy-to-read maps and directions; and provide nearby parking.

## **7. Remeasure**

After implementing changes, collect data on the same measurements for the same period of time, studying apples-to-apples, Lowe says. Note the dates corrective actions were implemented and remeasured.

"You don't have a study until you remeasure," Lowe says. "A mistake many centers make is ending the study after implementing changes."

If, after a specified period, desired improvement isn't achieved, Lowe says to adjust the interventions, then remeasure for the same time period. In fact, periodic remeasurement is important to ensure progress over time, Lowe says. "You're telling your own quality improvement story, layering one chapter on top of another," she says.

## **8. Report**

In this step, communicate the study findings to relevant members of the organization. Kuznets says the report should include in layman's terms:

- the problem statement
- how the center obtained information
- findings
- conclusions
- limitations of findings
- questions for future study
- graphs, if helpful.

Lowe also suggests noting with dates when the report was presented to the QI committee, staff, medical executive committee, and board of directors. ❖

—Leslie Flowers

*Source: Quality Improvement and Benchmarking: A Workbook of Strategies and Tools for Success: 2006 edition. AAAHC Institute for Quality Improvement (www.aaahc-qi.org).*

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## **QI standards for ASCs**

Ongoing quality improvement activities are required by the 3 main accrediting bodies for ASCs:

### **American Association for Accreditation of Ambulatory Surgery Facilities, Inc (AAAASF)**

—www.aaaasf.org

Facilities must have a written quality improvement program. The program may include pertinent surveys or projects that monitor and evaluate the quality of patient care, evaluate methods to improve patient care, identify and correct deficiencies within the facility, and alert the medical director to identify and resolve recurring problems. Also, surgeon peer review is performed at least every 6 months and includes reviews of both random cases and all unanticipated operative sequelae. AAAASF operates an internet database of surgeon peer review of 900,000 procedures.

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## **Joint Commission on Accreditation of Healthcare Organizations (JCAHO)**

—[www.jcaho.org](http://www.jcaho.org)

Accredited organizations must meet 6 performance improvement standards:

1. Collect data to monitor performance.
2. Systematically aggregate and analyze data.
3. Analyze the data for undesirable patterns and trends. (This standard is among the highest in noncompliance.)
4. Identify a sentinel event and demonstrate proper steps taken to remedy root causes, such as reporting through appropriate channels as required by state regulations; conducting a root cause analysis to identify contributing processes and system factors; and implementing risk reduction or action plans.
5. Apply findings from data analysis to change or improve patient safety performance and reduce risk of sentinel events.
6. Annually identify and analyze a high-risk practice as part of an ongoing proactive program to reduce unanticipated adverse events, such as surgical fires or sleep apnea among high-body-mass-index patients.

JCAHO recently changed its performance improvement review from center presentations to a dialog between the surveyor and key staff.

## **Accreditation Association for Ambulatory Health Care, Inc (AAAHC)**

—[www.aaahc.org](http://www.aaahc.org)

According to the AAAHC standards: “An accreditable organization maintains an active, integrated, organized, peer-based quality improvement (QI) program as evidenced by the following characteristics:

- “A. The organization develops and implements a quality improvement program that is broad in scope to address clinical, administrative, and cost-of-care performance issues, as well as actual patient outcomes, ie, results of care, including safety of patients.
- “B. The organization conducts specific quality improvement activities that support the goals of the QI program. Quality improvement activities must include, but are not limited to, the following characteristics:
1. The assessed purpose of the activity and the significance of the problem(s) or concern(s)
  2. Identification of performance measures, goals, and objectives
  3. Identification of data related to established criteria to evaluate and analyze the frequency, severity, and source of suspected problems or concerns that have been identified
  4. Implementation of corrective actions such as interventions to resolve important problems or concerns that have been identified
  5. Remeasurement of the problem to determine objectively whether the corrective actions have achieved and sustained demonstrable improvement
  6. Identification, analysis, and implementation of additional corrective actions, if the problem remains, to achieve and sustain demonstrable improvement
  7. Communication of the findings of the quality improvement activities to the governing body and throughout the organization, as appropriate, and incorporation of such findings into the organization’s educational activities (closing the QI loop).
- “C. The organization’s quality improvement program must include participation in performance benchmarking activities that will allow for the comparison of key performance measures with other similar organizations or with recognized best practices of national or professional targets or goals.”

## **Making time for quality improvement**

When procedures run back to back, and the staff works full shifts, how can an ambulatory surgery center (ASC) create time and interest in performing quality improvement (QI) studies?

ASC QI managers and staff who attended the Fifth Annual National Quality Forum for Ambulatory Health Care in December in Las Vegas brainstormed about practical ways to carve out time for QI projects.

Their recommendations:

### **Senior leaders must present QI as a priority**

Management must support QI with resources, such as time for staff to spend on projects.

### **Choose meaningful, relevant studies that will benefit the ASC**

ASC QI priorities should be derived from tracking and trending data of important indicators, such as medication errors, patient dissatisfaction, hospital transfers, or infection rates. "Go for the low-hanging fruit," Lowe says. "Only choose studies that will effect change."

### **Use spreadsheet software**

Present tracking and trending data clearly on a spreadsheet to demonstrate change or need for improvement.

### **Know where to begin a study and set attainable goals**

Use research literature, such as benchmarking studies and white papers from professional organizations, to establish goals.

### **Write an action plan for the study and prioritize tasks**

The action plan is a list of possible solutions to reduce the gap between the problem and the goal. Delegate and assign tasks to staff and document results. For example, to reduce postdischarge medication errors, assign a nurse to call patients at home within 24 hours to review medication instructions. Document patient medication compliance rates.

### **Use the staff efficiently**

Schedule an appropriate staff mix to free up staff members to work on QI. For example, empower assistive personnel to perform nonclinical duties—pushing wheelchairs, cleaning stretchers, entering data into a spreadsheet—and allow registered nurses to work on QI studies, such as benchmarking or analyzing data. Tasks should be appropriate to a staff person's education level.

### **Determine the right measures**

Avoid wasting time collecting unnecessary data. Collect only information needed to improve outcomes. Take time to drill down first to discover where problems lie, then collect data on that indicator. For example, if the center's goal is to improve discharge times, it is more effective to study recovery times rather than patient arrival times. "Continuously recording information without using the data for corrective solutions is a time waster," says Gayle Lowe, RN, director of quality standards, ambulatory services, Hospital Corporation of America (HCA), Western Division.

### **More timesaving ideas**

- Post a large flip chart in a break room with study questions so staff can add thoughts and ideas.
- Plan QI meetings only when necessary and establish a clear agenda.
- Network with similar ASCs at conferences and through professional organizations to benchmark and share information.
- Understand and accept that the QI study may take an initial investment, partic-

ularly in personnel, but payoffs often include improved efficiencies, patient safety, and staff retention. "RNs are motivated to improve health care delivery," Lowe says. "QI is one way to satisfy their need for social interaction and can improve morale and reduce costs related to turnover."

Lowe adds that most QI projects lead to greater patient satisfaction and operating efficiencies, with a better bottom line for the center.

*Source: Gayle Lowe, RN, manager of ambulatory services, quality standards, HCA, and attendees at the Accreditation Association for Ambulatory Health Care Institute for Quality Improvement's Fifth Annual National Quality Forum for Ambulatory Health Care.*

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## **Step by step through a QI study**

St Mark's Outpatient Surgery Center in Salt Lake City is experienced in performing quality improvement studies.

Diana McPherson, RHIA, MBA, administrator of the multispecialty center, says the center tries to perform about 4 studies a year.

"They improve our processes," she says.

"The staff will readily support change when you can validate why surgeons or patients are requesting that a process needs improvement. Competition is number one in ambulatory surgery, and one way to compete is to be superior in patient care and safety through performance improvement. We have to continuously improve to keep physicians and patients here."

Topics for QI studies have included:

- Improving how equipment and supplies for cases are pulled according to physician preference cards.
- Testing dilating drops that decrease preoperative preparation times for ophthalmology cases. (Both studies were derived from physician satisfaction surveys.)
- Designing methods to monitor narcotic counts continuously—a prospective look at preventing narcotic misuse.

The study outlined below examined marking devices used for surgical site marking.

### **Site marker study**

#### **1. Select a study topic and write problem statement**

The problem statement: "Visibility of surgical site marking after application of prepping solution was found to be removed, resulting in potential wrong-site surgery."

#### **2. Develop measures**

St Mark's studied the effectiveness of 3 brands of markers following prepping solution application. OR nurses filled out a survey form on the effectiveness of each marker. The study measured marker effectiveness during a 6-month period.

#### **3. Pilot test measures**

The measures tested well. The study proceeds.

#### **4. Clean data**

Data complete. Data on 86 procedures showed one brand of marker was most effective and durable after application of prepping solution.

#### **5. Design and implement interventions**

Use this brand of marker exclusively for site marking.

#### **6. Remeasure**

After 3 months, OR staff still reports satisfaction with this brand. Next step is to repeat the study to measure the effectiveness of prepping solutions to maintain marker visibility.

**7. Report**

Quality improvement report submitted to the performance improvement committee, medical executive committee, and governing board for review and recommendations.

Quality of the chosen marker will be measured in the next quarter, and results will be reported to the same groups. The impact of prepping solutions on site marking will be studied the following quarter.