

The Joint Commission

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and improvement information

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Using Surgical Outcomes to Improve Care and Lower Costs

The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) is a nationally validated, risk-adjusted, outcomes-based program created to measure and improve the quality of surgical care. The program employs a prospective, peer-controlled, and validated database to quantify 30-day risk-adjusted surgical outcomes, which allows valid comparison of outcomes among all hospitals in the program; to date, there are a total of 221 participating organizations (a complete list can be found at https://acsnsqip.org/main/about_sites.asp). The unique feature of the ACS NSQIP is that the data used for quality evaluation and improvement are clinical data, not administrative claims or billing data.

Participation in the ACS NSQIP positions hospitals to realize significant benefits, which may include the following:

- Sustained reduction in postoperative mortality rates
- Sustained reduction in postoperative morbidity rates
- Sustained reduction in median length of stay
- Increased patient satisfaction
- Streamlined data collection for surgical quality improvement programs. For example, hospitals are able to enter both ACS NSQIP and Surgical Care Improvement Program (SCIP) data using the ACS NSQIP data collection tool.
- Earn a Joint Commission “Merit Badge” on the Quality Check[®] Web site
- Surgical safety tools to improve the safety of surgery and minimize surgical errors
- Ability to examine individual surgeon performance
- Access to best-practices tools developed by clinical surgical experts
- Participation in hospital collaboratives

There are a number of unique aspects of the ACS NSQIP programs—the following are just a sample:

- The data are clinical. The clinically derived data are more detailed, more robust, and more informative than using administrative data.
- The program capitalizes on the collection and assessment of 30-day postoperative outcomes.
- The program integrates best practices for attaining high-quality, safe surgical care.

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ACS NSQIP Data Collection Overview

The ACS NSQIP collects data on variables, including preoperative risk factors, intraoperative variables, and 30-day postoperative mortality and morbidity outcomes for patients undergoing major and minor surgical procedures in both the inpatient and outpatient setting. The data are collected, validated, and submitted by a trained data collector at each site through a secure, Health Insurance Portability and Accountability Act–compliant, Web-based system with built-in software checks and user information prompts to ensure completeness, uniformity, and validity. In addition, separate data audits are routinely conducted to further ensure that high-quality and valid data are collected.

Using stepwise, hierarchical, logistic regression, risk-adjusted 30-day morbidity and mortality outcomes are computed for each participating hospital. Outcomes are reported as observed versus expected (O/E) ratios and are distributed in a semiannual report. An O/E ratio of less than 1 indicates the hospital is performing better than expected given the complexity of its patient population and surgical case complexity. An O/E ratio greater than 1 indicates the hospital is not performing as well as expected.

Hospitals enrolled in the ACS NSQIP have their data presented to them via comprehensive semiannual

reports, as well as real-time, continuously updated, online benchmarking reports. Both sets of reports allow participating sites to continually monitor their quality-improvement efforts and to compare, on a blinded basis, their surgical outcomes with those of peer hospitals with national averages.

There are currently 28 different areas of clinical feedback. The feedback for outcomes includes such conditions as surgical infection, deep venous thrombosis, cardiac complications, and so on. Each outcome is targeted to different types of specialties as well as for different specific procedures.

Risk Adjustment and Why It Matters

Benchmarking is one of the best ways to evaluate and improve surgical quality. However, it is essential that hospitals are not mistakenly penalized for caring for high-severity patients, while hospitals are also not mistakenly rewarded for choosing low-severity, healthy patients. A *fair* comparison takes into account the fact that hospitals may care for patients of differing levels of health and sickness.

Risk adjustment, or taking into account the varying levels of clinical severity, helps to “level the playing field” when benchmarking and comparing surgical outcomes. Risk adjustment is a statistical process that uses regression models to estimate surgical risk for each patient in the dataset,

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This diagram offers an overview of the steps to accomplishing improvement with the ACS NSQIP program.

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based on individual patient characteristics. Figure 1 shows how the ranking of hospital performance changes when adjustment for patient risk is not performed versus when it is performed.

Ongoing Initiatives

The ACS NSQIP is continually expanding and advancing. A number of initiatives are currently being enhanced, according to Clifford Y. Ko, M.D., F.A.C.S., director of the program, and Karen Richards, administrative director.

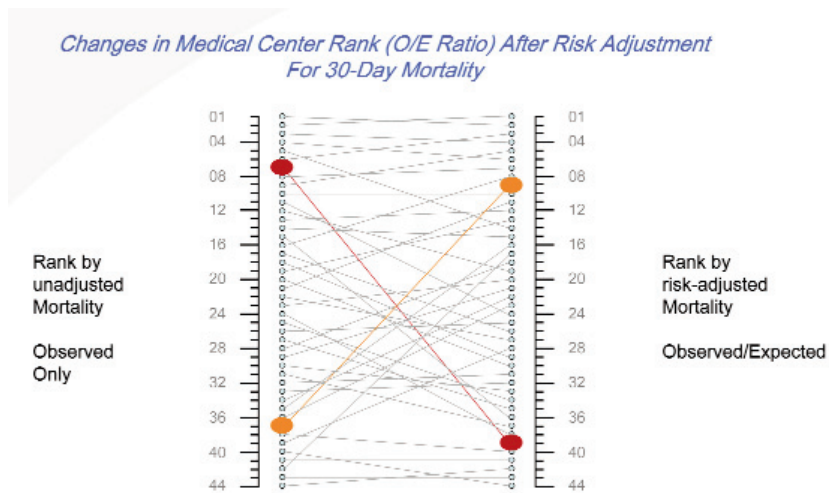
One new program is the rural/small hospital initiative. This pilot program is intended to foster participation by hospitals with less than 100 beds. In addition, a high-risk procedures program is designed for larger tertiary/quaternary hospitals that routinely perform high-risk, high-complexity procedures. In brief, this program collects data on these types of procedures and includes data collection of the predictors and outcomes appropriate to these cases.

The ACS NSQIP addresses a number of items, including SCIP outcomes. In addition, the program addresses the surgical outcomes contained within the newly announced hospital-acquired conditions initiative.

While the primary focus of the ACS NSQIP has been on the systems of care at participating hospitals, the program is also able to perform in-depth statistical analysis on individual surgeon data. At present, the online reporting system does include blinded, surgeon-specific reports, with more individual surgeon reports in development.

An ongoing method for sharing best practices with other hospitals and providers is through collaboratives. Currently, there are more than 10 regional collaboratives, with more in

Figure 1. Data Analysis Dashboard



On the left side, hospitals are ranked without risk adjustment, or without taking into account the severity of the patient's illness and other coexisting conditions that may influence postoperative outcomes (based on those observed versus expected).


The right side ranks the hospitals using risk adjustment for individual patient risk factors. A hospital ranked 7th lowest without adjustment (on the left) is ranked 39th with adjustment (on the right), and a hospital ranked 37th without adjustment is ranking 9th with adjustment (on the right).

Source: American College of Surgeons, Chicago. Used with permission.

development. These collaboratives are both geographically based and hospital systems-based. Presently the ACS is also developing procedure-based collaboratives.

Field Reactions

The reactions to the program have reportedly been positive. Ko and Richards state that the program has grown each year while the number of hospitals, the attendance at the Annual ACS NSQIP meeting, and the recognition by outside quality groups have expanded substantially.

For more information on the program, call 312-202-5213 or visit <http://www.acsnsqip.com>. 

Benchmark is looking for a few good organizations!

Does your organization have a performance measurement or improvement initiative that you'd like to share in a future issue of *Benchmark*? Or have you learned something from a recent issue of *Benchmark*, put it into practice, and improved your organization's performance? We'd like to know...and we'd like others to know, too! E-mail editor Audrie Bretl Roelf at benchmark@jcrinc.com