



ACS NSQIP®: Key Peer-Reviewed Studies

Key studies demonstrate that ACS NSQIP, which uses risk-adjusted, clinical and validated outcomes data, helps hospitals improve the quality of care, prevent complications and reduce the cost of care.

American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®)

1. Improves Outcomes and Reduces Complications: A study published in the September 2009 issue of the *Annals of Surgery* evaluated 118 hospitals that began participating in ACS NSQIP between 2005 and 2007. The study showed that hospitals participating in ACS NSQIP each prevented 250-500 complications annually. The study also concluded that hospitals of all types – large and small, urban and rural, teaching and non-teaching – improved their quality of care through the use of ACS NSQIP. The hospitals that were poorer performers when they joined ACS NSQIP achieved the greatest quality improvement.¹

2. Reduces Complications and Saves Money: A study published in 2012 in the *Journal of the American College of Surgeons* found that a 10-hospital collaborative in Tennessee, called the Tennessee Surgical Quality Collaborative, successfully reduced complications and saved \$2.2 million per 10,000 cases from 2009 to 2010. Hospitals saw improvement in superficial surgical site infection (18.9 percent reduction), acute renal failure (25.1 percent reduction), graft/prosthesis/flap failure (60.5 percent reduction), ventilator longer than 48 hours (14.7 percent reduction) and wound disruption (34.3 percent) during this time period. Because ACS NSQIP cases are sampled, the collaborative projects saved at least \$8 million from 2009 to 2010.²

3. Saves Money: Quality improvement initiatives save money by reducing complications and length of stay. One study recaps two such cases in which initiatives were implemented after review of ACS NSQIP data: Surrey Memorial Hospital in British Columbia saved about \$2.5 million by reducing the rate of surgical site infections (SSIs) over a two-year period, while Henry Ford Hospital in Detroit saved about \$2 million by reducing patient length of stay by an average of 1.54 days.³

4. Answers the Call for Better Quality Measures: Research reveals that there is only a weak association between compliance with process measures and risk-adjusted outcomes.⁴ There is growing national interest in developing risk-adjusted, outcomes-based measures, including new measures based on ACS NSQIP endorsed by the National Quality Forum.⁵

5. Uses Robust Clinical Data: A 2008 study in *Surgery* compared ACS NSQIP's risk-adjusted, clinical, 30-day outcomes database with the administrative data collected in the University Health System Consortium (UHC) program. Researchers found that ACS NSQIP uncovered 26 percent more complications than the UHC program. Among surgical site infections (SSI), 11 percent of patients were reported to have had an SSI in the ACS NSQIP database while only 1 percent in the UHC.⁶

6. Reduces Morbidity: A study published in the August 2008 issue of *Annals of Surgery* evaluated patients undergoing general or vascular surgery in 128 Department of Veterans Affairs (VA) medical centers and 14 private sector hospitals between 2001 and 2004. The study showed that the implementation of ACS NSQIP in private sector hospitals was associated with a reduction in morbidity following major and general vascular surgery similar to what had previously been observed for eight surgical specialties in the VA medical centers.⁷



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7 Reduces Mortality: NSQIP started as a statistically reliable, risk-adjusted tool to help the Department of Veterans Affairs hospitals measure their quality of care. A 2007 study showed that from 1991 to 2006, the hospitals saw a 47 percent drop in postoperative mortality and a 43 percent drop in postoperative morbidity rates.⁸

8 Uses Highly Effective Training and Auditing Procedures: Data used for evaluating quality of medical care need to be of high reliability to ensure valid quality assessment and benchmarking. A study published in the January 2010 issue of the *Journal of the American College of Surgeons* evaluated the data quality and inter-rater reliability of ACS NSQIP for the 2005 through 2008 calendar years. The study determined the training and audit procedures for hospitals participating in ACS NSQIP are highly effective in collecting robust and reliable data. Audit results show that data have been reliable since the program's inception and that reliability has improved every year.⁹

9 Includes Validated Measurements: Risk-adjusted mortality and morbidity rates are often used as measures of the quality of surgical care, so it is important to ensure they are valid measures. A study published in the *Journal of the American College of Surgeons* assessed the validity of risk-adjusted surgical morbidity and mortality rates as measures of quality of care and confirmed an association between the risk-adjusted adverse outcomes of surgical mortality and postoperative morbidity.¹⁰

Accessing Data

Hospitals participating in the American College of Surgeons National Quality Improvement Program (ACS NSQIP®) are able to access data in multiple forms including the Semiannual Report, online reports, and Participant Use Data File. The Semiannual Report and online reports are site-specific reports that help participants monitor their improvement. The Participant Use Data File (PUF) is a Health Insurance Portability and Accountability Act (HIPAA) compliant data file with cases submitted to ACS NSQIP that contains patient level, aggregate data but does not identify hospitals, healthcare providers or patients. The intended purpose of this file is to provide researchers at participating sites with a data resource they can use to investigate and advance the quality of care delivered to the surgical patient through the analysis of cases captured by ACS NSQIP. The PUF is provided at no additional cost to employees (Surgeons, Surgical Clinical Reviewers, etc.) of ACS NSQIP participating hospitals.

To learn more about ACS NSQIP or to enroll, please visit www.acsnsqip.org or call 312-202-5607 or 312-202-5441 to speak with an ACS NSQIP representative.

Sources

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¹⁰ Daley J, et al. "Validating Risk-Adjusted Surgical Outcomes: Site Visit Assessment of Process and Structure." *J Am Coll Surg.* 1997;185:341–351.