

# Hospitals participating in ACS NSQIP significantly improve surgical outcomes over time

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The majority of hospitals participating in the American College of Surgeons National Surgical Quality Improvement Project (ACS NSQIP) improve surgical outcomes over time, and improvement continues with each year that hospitals participate in the program, according to a new study published online today in *Annals of Surgery*.

ACS NSQIP is a nationally validated, risk-adjusted, outcomes-based program designed to measure and improve the quality of surgical care in participating hospitals. The program employs prospective, peer-controlled, validated clinical data collection to quantify 30-day surgical outcomes and allows comparisons of outcomes among all participating hospitals.

The new study by the American College of Surgeons research team found that among hospitals currently participating in the program for at least three years, 69 percent reduced the rate of death; 79 percent reduced the rate of complications; and 71 percent reduced the rate of [surgical site infections](#). It was estimated that, on average, these hospitals reduced their rate of death by 0.8 percent per year; reduced their rate of complications by 3.1 percent per year; and reduced their rate of surgical site infection by 2.6 percent per year (with respect to the prior year's rates).

Because these are annual reductions, hospitals committed to

participation in the program can see significant improvement accumulate over time, according to study authors. For example, by year five, an average size [hospital](#) is likely to be preventing at least 7 deaths, 150 complications and 66 surgical site infections per 10,000 surgical procedures. A large hospital with 800 to 1,000 beds could prevent twice as many instances of patient harm, study authors noted. The estimates likely underestimate the actual benefits of the program since, according to the study, some complications were not considered because they could not be counted consistently across time, and because multiple complications in the same patient were also not counted.

"These results show that hospitals committed to measuring and acting on their clinical data, implementing steps to improve, and establishing a culture for continuous quality improvement can achieve significant reductions in patient harm," said study coauthor Clifford Ko, MD, FACS, ACS director of the Division of Research and Optimal Patient Care. "Studies have consistently shown that reliance on clinical data is necessary for hospitals to get an accurate picture of their outcomes and to identify areas for improvement. Because of inaccuracies, it is often inappropriate to use administrative data to make quality improvement assessments"

A 2012 study in the *Annals of Surgery* found ACS NSQIP data more accurately identified complications compared to Centers for Medicare and Medicaid Services (CMS) claims data. CMS data inaccurately identified complications between 48 to 84 percent of the time. In the case of surgical site infections, claims data only identified 27 percent of SSIs, while misclassifying 71 percent of SSIs that did not actually occur. Further, a 2015 *Annals of Surgery* study comparing ACS NSQIP and CMS claims data found claims data is not accurate for making quality comparisons between hospitals.

"We now have enough evidence to know that the best approach to

quality improvement requires clinical outcomes data. Then, once hospitals have an accurate measure of their quality, they must act on that data to improve," said Dr. Ko.

Today's study is based on ACS NSQIP data collected between 2006 and 2013. Complications included in morbidity were: superficial, deep or organ space [surgical site](#) infection; failure to wean; pneumonia; renal complications; urinary tract infection; cardiac complications; and vein thrombosis/pulmonary embolism.

A previous study published in 2009 in the *Annals of Surgery* found 118 hospitals participating in ACS NSQIP between 2005 and 2007 each prevented 250 to 500 complications annually. The study also found that all types of hospitals (large and small, urban and rural, teaching and non-teaching) were able to improve their [surgical outcomes](#).

**More information:** 1 Lawson EH, Louie R, Zingmond DS, et al. A comparison of clinical registry versus administrative claims data for reporting of 30-day surgical complications. *Ann Surg.* 2012; 256(6):973-81.

2 Lawson EH, Zingmond DS, Hall BL, et al. Comparison between clinical registry and medicare claims data on the classification of hospital quality of surgical care. *Ann Surg.* 2015; 261(2):290-6.

3 Hall BL, Hamilton BH, Richards K, et al. Does surgical quality improve in the American College of Surgeons National Surgical Quality Improvement Program: an evaluation of all participating hospitals. *Ann Surg.* 2009; 250(3):363-76.

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