

ACS NSQIP surgical risk calculator predicts outcomes for geriatric surgical patients

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The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) Surgical Risk Calculator establishes a new threshold for assessing quality care for elderly patients undergoing operations. The NSQIP Surgical Risk Calculator can now accurately predict four specific quality-of-life outcomes that transcend traditional measures of successful surgery, such as complication and mortality rates, and now reflects the expected effects of surgery on the ability of older patients to function independently.

Study results on the [risk calculator](#)'s new capabilities were presented at the American College of Surgeons Clinical Congress 2019 and published online on the *Journal of the American College of Surgeons* website ahead of print (January 2020). The researchers reported that the Surgical Risk Calculator's precision and accuracy in predicting these outcomes will help surgeons counsel [older adults](#) considering surgery and their families about the likelihood of the patient developing a pressure ulcer, becoming delirious, needing a new mobility device, or experiencing functional decline.

"The Surgical Risk Calculator sets a new standard by which we care for this vulnerable population when undergoing surgery. The calculator is a means for getting information important to these patients and their families and raises the bar for measuring and delivering quality surgical care to older adults," said Clifford Y. Ko, MD, MS, MSHS, FACS, FASCRS, Director of the ACS Division of Research and Optimal Patient Care, which administers ACS NSQIP, and study coauthor.

ACS NSQIP is a nationally validated, risk-adjusted, outcomes-based program for measuring and improving the quality of surgical care. Built by surgeons for surgeons, ACS NSQIP provides participating hospitals with tools, analyses, and reports to make informed decisions about improving the quality of surgical care. Peer-reviewed published studies have shown that ACS NSQIP improves the quality of surgical care while also reducing complications and costs.

The ACS Geriatric Surgery Task Force in 2014 launched the Geriatric Surgery Pilot Project in participating NSQIP hospitals to collect data on geriatric-specific patient characteristics and outcomes. In July 2019, ACS introduced the Geriatric Surgery Verification Program. This program presents 30 surgical standards for systematically improving surgical care and outcomes, and providing hospitals with a framework for continuously improving surgical care for older adults.

The NSQIP Surgical Risk Calculator is a web-based decision aid and informed consent tool that provides customized risk estimates for patients preparing for a surgical procedure. Surgeons enter preoperative information about a patient and the Surgical Risk Calculator estimates the patient's risk of postoperative complications. Since August 19, 2019, surgeons have been able to use the ACS NSQIP Surgical Risk Calculator to view Geriatric Outcomes for patients 65 years of age and older.

The objective of the present study was to determine whether data collected by the NSQIP Geriatric Surgical Pilot Program could predict four specific postoperative outcomes for older patients: pressure ulcer, delirium, new mobility aid use, and functional decline. The study assessed the predictive value of six geriatric-specific preoperative factors: living situation, fall history, use of a mobility aid, cognitive impairment, surrogate-signed consent, and palliative-on-admission status.

"The variables were chosen because they have an impact on older adults and information about them can be gathered from patients' medical records. They were selected from surgical literature showing that they are directly related to outcomes. For example, patients who fall within a year prior to surgery have a higher risk of functional impairment in general and after surgery. Patients who have [cognitive impairment](#) have a higher risk of delirium after surgery," said study coauthor, Ronnie A. Rosenthal, MD, FACS, professor of surgery and geriatrics, Yale University School of Medicine, New Haven, Conn.

These variables, as well as the standard 21 NSQIP variables, were evaluated to assess how well these variables could predict adverse outcomes for [elderly patients](#). Data were collected from 38,045 patients 65 years of age or older who had surgery at one of ACS NSQIP's 21 participating hospitals between 2014 and 2017, and rates of four specific quality-of-life outcomes were tabulated.

In this study, 42 percent of patients required a new mobility aid, 37.68 percent had functional decline, 10.51 percent had delirium, and 1.43 percent developed a pressure ulcer after their operations. The strongest predictive preoperative geriatric variables were impaired cognition, fall history within one year, and need for a mobility aid.

"The study was the first time a large database was used to collect data about some risk factors unique to older patients and the outcomes that have a unique role among these patients. The Surgical Risk Calculator shows surgeons what they should be looking for when they counsel individual patients. By helping to understand which patients may be at risk, surgeons also can advocate for better in-hospital anticipation and prevention of adverse outcomes," said Dr. Rosenthal.

"This research pushes the envelope for assessing outcomes that matter to older adults and families. It gives patients and their families a better

understanding of what their needs may be when they leave the hospital—whether they may need more help at home or have a more prolonged recovery," said study coauthor, Marcia Russell, MD, FACS, an associate professor of [surgery](#), University of California, Los Angeles Department of Surgery.

More information: Enhancing the ACS NSQIP Surgical Risk Calculator to Predict Geriatric Outcomes. Journal of American College of Surgeons.

Provided by American College of Surgeons

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