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**For Immediate Release:
February 3, 2014**

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New Tool Shows Promise in Helping Surgical Teams Predict Home Discharge for Their Patients

Journal of the American College of Surgeons study reports that a simple interview-based assessment tool may help surgical teams better counsel patients about their postoperative care, smoothing the transition from operation to recovery

Chicago (February 3, 2014): Frequently predicted surgical outcomes primarily focus on adverse outcomes such as complications and death, but most patients also want to know about good outcomes, including whether they will return home after a surgical procedure, or, conversely, if they will need to prepare for a lengthy rehabilitation process at a care facility. Now, research published in the February issue of the *Journal of the American College of Surgeons* shows that a new type of surgical risk calculator can accurately predict postoperative home discharge.

"In some cases, the recuperation from an operation is as critical as the surgical therapy itself," said lead study author Joseph Hyder, MD, PhD, an instructor of anesthesiology at the Mayo Clinic, Rochester, Minn., and a collaborator in residence at the Center for Surgery and Public Health at Brigham and Women's Hospital, Boston. "If patients are going to require prolonged convalescence, it's helpful for them to be able to make arrangements in advance with their families for the kind of care and resources they will need to muster after their operations."

Although there are other surgical risk calculators that have been released and are already in use, Dr. Hyder said, a comprehensive tool that can predict patient-centered outcomes such as home discharge after an operation is still lacking. Therefore, he and his colleagues sought to create and benchmark the performance of a new application

for a risk calculator that allows clinicians to predict whether a patient will likely return home immediately following an operation. "Our study results show that we can take some of the things we have learned from risk calculators for morbidity and mortality and apply those findings to a patient-centered outcome," Dr. Hyder said. "And we can do it in a simple fashion, with just a few questions that allow patients to engage in the discernment with physicians to get quick and accurate results."

For the study, researchers used outcomes data from the accurate ACS National Surgical Quality Improvement Program (ACS NSQIP®) database. ACS NSQIP is the leading nationally validated, risk-adjusted, outcomes-based program to measure and improve the quality of care in private sector hospitals. The researchers' analysis involved 88,068 patients who underwent general and vascular surgery at more than 400 hospitals in 2011. They created a statistical prediction model called the "Home Calculator" from this data. This simple interview-based tool factors in five patient risk factors: age, functional status (ability to perform activities of daily living), American Society of Anesthesiologists Performance Status, whether the surgery was elective, and a patient's location prior to hospitalization (home, a nursing facility, or an emergency department).

Based upon these variables a score is generated, which translates into a probability estimate of discharge to home postoperatively. Researchers found that the Home Calculator demonstrated excellent prediction results for home discharge across multiple surgical specialties, including general, vascular, gynecologic, urologic, orthopedic, and thoracic surgery. Additionally, when the investigators performed tests to validate the tool against other surgical risk tools developed by the American College of Surgeons for predicting morbidity and mortality, they found the prediction results of the Home Calculator to be similar to these gold standard models.

"What is different about our study is that the tool is very simple, and can be used by other members of the surgical patient care team," Dr Hyder explained. "It can be worked through by nurses with patients, so it brings the patient on board with the decision-making process."

And while others have worked to develop assessment tools that predict patient-centered outcomes such as home discharge, Dr. Hyder points out that some of these models have been limited in that they include features such as lab testing and postoperative data collection and address only the narrowest surgical treatment focus for patients. "There are some useful tools that others have built that applied to very specific surgical procedures and a small subset of patients, but our tool is different since it was derived and created in a very diverse population, general and vascular surgical patients, and then validated in even a more diverse surgical population," Dr. Hyder said.

"This tool predicts where patients are likely to be discharged." Dr. Hyder said. "For some patients who are discharged home, that may not be the best place for them to convalesce. So this study addresses what is happening, not necessarily what ought to

be happening. However most of our patients want to return home as soon as possible right after hospitalization, and this tool provides a way to discuss their postdischarge recovery environments before their operations take place.”

The Home Calculator is available in the study about its development and use. published in the February issue of the *Journal of the American College of Surgeons*.

Other study authors include Elliot Wakeam, MD; Elizabeth B. Habermann, PhD, MPH; Erik P. Hess, MD, MSc; Robert R. Cima, MD, MA, FACS; and Louis L. Nguyen, MD, MBA, MPH, FACS.

Citation: *Journal of the American College of Surgeons*, February 2014: Vol 218 (2) 226-236.

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About the American College of Surgeons

The American College of Surgeons is a scientific and educational organization of surgeons that was founded in 1913 to raise the standards of surgical practice and improve the quality of care for surgical patients. The College is dedicated to the ethical and competent practice of surgery. Its achievements have significantly influenced the course of scientific surgery in America and have established it as an important advocate for all surgical patients. The College has more than 79,000 members and is the largest organization of surgeons in the world. For more information, visit www.facs.org.

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Online February 3, 2014