

Complications following surgery predict costly readmissions

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or absence – of complications following surgery is a strong indicator of which patients are likely to be readmitted to the hospital in the 30 days following their procedure, according to a study published today in *JAMA Surgery*. Predicting which patients are most likely to experience complications using a simple online tool may allow healthcare professionals to flag patients at high risk of readmission in real time and alter care to reduce expensive trips back to the hospital.

The study examined more than 142,000 [patients](#) who had non-cardiac surgery using the American College of Surgeons National Surgical

Quality Improvement Program database. After controlling for severity of disease and surgical complexity, analyses showed that the rate of unplanned 30-day readmissions was approximately 78 percent for patients with any complication diagnosed following discharge from the hospital. Conversely, the rate of unplanned 30-day readmissions was less than 5 percent for patients without any [complications](#).

Currently, hospitals do not have a way to identify surgical patients who are at high risk for unplanned re-hospitalizations. But, there is an [online tool](#) – the American College of Surgeon's Surgical Risk Calculator – that allows [healthcare professionals](#) to enter patient information like age, body mass index and smoking status and get an estimate of the patient's risk of complications following surgery.

"If a patient's predicted risk of complications is high, which we've shown puts them at greater risk of readmission, a physician might decide to move the patient to the intensive care unit or a step-down unit after surgery, as opposed to a regular hospital unit that manages less sick patients," said Laurent G. Glance, M.D., lead study author and professor in the Departments of Anesthesiology and Public Health Sciences at the University of Rochester School of Medicine and Dentistry. "This information could also help with staffing. Instead of taking care of eight patients, a nurse might be assigned to monitor just two or three high-risk patients in an effort to prevent complications that could lead to more hospitalizations down the road."

Patients at [high risk](#) of complications could also be more closely monitored after they are discharged from the hospital and sent home in order to uncover and treat [surgical complications](#) earlier in their course, before patients require rehospitalization.

Hospital readmissions are believed to be an indicator of inferior care and are the focus of efforts by the Centers for Medicare and Medicaid

Services to reduce [health care](#) cost and improve quality. Glance's team believes that measuring the end products of health care, such as death, complications and re-hospitalizations, and reporting that information after the fact to [health care professionals](#), patients and third-party payers in the form of report cards, may not be sufficient to achieve the best possible outcomes.

"For physicians, it can be hard to know what to do with report card data," said Glance, who is also a cardiac anesthesiologist at UR Medicine's Strong Memorial Hospital. "We need to provide healthcare teams with information they can use before, not after complications and re-hospitalizations occur."

Glance adds that information about a patient's likelihood of complications could be added to his or her electronic medical record and used before, during and following surgery to help guide clinical decision making.

This is the first study to examine the association between the risk of complications after surgery and the rate of unplanned re-hospitalizations in a large, nationally representative sample of patients undergoing general surgery. Incorporating information from the American College of Surgeons National Surgical Quality Improvement Program and Surgical Risk Calculator into the daily workflow of healthcare teams in hospitals across the country could help achieve the Center for Medicare and Medicaid Services' goal to reduce hospital readmissions and generate savings in health care costs in the coming years.

Glance, who is the vice-chair for research in the Department of Anesthesiology and holds a secondary appointment at RAND Health, was recently appointed to the National Quality Forum's All-Cause Admissions and Readmissions Steering Committee. As a member of the committee, Glance will help review and endorse measures related to

admissions and hospital readmissions that can be used for accountability and public reporting across all populations and settings of care.

Provided by University of Rochester Medical Center

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