

Reported surgical quality measures not associated with lower infection rates

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A study by investigators at Case Western Reserve University School of Medicine published in this week's issue of *JAMA* found that public hospital comparison data reported by the U.S. Department of Health and Human Services does not accurately correlate with a patient's risk for surgical postoperative infection. The retrospective, cohort study of more than 400,000 patients from 398 hospitals nationwide examined the relationship between reported adherence to six infection prevention Surgical Care Improvement Project (SCIP) measures and the probability of patient postoperative infection.

"The SCIP has done an outstanding job of designing and identifying proper infection prevention measures, but there is still more work to be done," says Jonah J. Stulberg, MD, PhD, MPH, a recent graduate of Case Western Reserve University School of Medicine, and the lead author of the study. "Our analysis shows that using a multi-measure approach to prevention is associated with a lower probability of patient infection, and that is something I think everyone can appreciate."

Due to new Value-Based Purchasing (VBP) incentives under the recently passed Health Care Reform Act, Medicare reimbursement will be tied to hospitals' adherence to SCIP measures. Researchers found that using a composite infection prevention score, one that assesses more than two measures per patient visit, was more accurate in predicting the probability of a patient developing a postoperative infection. It predicted approximately a 15 percent decreased risk of postoperative infection.

Within the current system, Medicare reports performance only on individual SCIP measures. Dr. Stulberg, who will soon begin his residency in the Department of Surgery at University Hospitals Case Medical Center, and his co-authors recommend SCIP require multiple measures be performed and recorded at every single patient visit. They found this will result in a more accurate prediction of whether a patient will develop a postoperative infection.

"Our inability to demonstrate a statistically significant association between individual measures and clinical outcomes at the patient level suggests that the rates, as reported on the Hospital Compare website, do not necessarily infer quality differences between hospitals," explains Siran Koroukian, PhD, Associate Professor of Epidemiology and Biostatistics at Case Western Reserve University School of Medicine and senior author of the study. "However, the multi-measure model in our study better captures the culture of quality in hospitals."

The SCIP is a national quality partnership dedicated to reducing the rate of surgical complications. It is the first, and largest, movement to measure the quality of care delivered for surgical patients in the U.S. Comprised of 20 measures covering various discrete elements of patient care, the six measures examined in this study focus on infection prevention efforts, which include:

- Patients who received antibiotics within one hour prior to surgery
- Patients who received the appropriate antibiotic for their specific procedure
- Patients whose antibiotics were discontinued within 24 hours after surgery

- Cardiac surgery patients with a controlled postoperative blood glucose level
- Surgery patients with appropriate surgical site hair removal
- Colorectal surgery patients with immediate postoperative normothermia

Although SCIP prevention measures give a strong indication of postoperative infection complication rates, there are several factors independent of the measures which may play an important role in determining the rates. Other aspects influencing surgical patient outcomes include the skill and knowledge of the surgical team, a safe and clean working environment, and a general culture of quality surrounding patient care are likely to be at least as important to the assessment of hospital quality.

More information: *JAMA*. 2010;303[24]:2479-2485.

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