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Surgical Care Improvement Project Measures among Rural and Urban Hospitals in West Virginia

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Rural surgery, the practice of surgery in facilities that serve rural communities, has a responsibility to adhere to surgical standards.¹ But, there are few studies that focus on the surgical care provided by rural providers.

The Surgical Care Improvement Project (SCIP) provides an opportunity to study the quality of care in rural facilities. The Centers for Medicare and Medicaid Services (CMS) and major health-care organizations, including the American College of Surgeons and the Joint Commission, organized SCIP as a nationwide undertaking to reduce the risk of surgical complications. CMS requires all hospitals that receive government funds to report a set of process-of-care indices, collectively known as SCIP measures, each shown in clinical studies to decrease the rates of surgical morbidity and mortality, notably surgical site infections, venous thromboembolism, and postoperative acute myocardial infarction.² Public posting of SCIP compliance is a requirement of federal payment programs.³

In this study, we asked whether rural hospitals in West Virginia satisfied SCIP quality measures. On July 2014, we accessed hospital SCIP measure performance on its publicly accessible Hospital Compare Web site that has data from all Medicare-certified hospitals.² SCIP compliance is the percent of cases that meet each item. We grouped facilities on the basis of whether they served a rural or urban community by the 2006 National Center for Health Statistics' Urban-Rural Classification Scheme for Counties and whether they were acute care or critical access hospitals. The mean percent SCIP measure compliance was determined for rural and urban facilities, along with the 95 per cent confidence interval on the mean. Standard statistical software was used (R Foundation for Statistical Computing, Vienna, Austria).

There were 54 hospitals in the state and 19 in rural counties. Nine had no reported data, leaving 10 hospitals in the rural group of hospitals. All 10 had one or more data elements missing. Mean SCIP measure compliance among rural critical access hospital was lower than national levels (vertical dashed line in the Fig. 1). for question 4 (Q4), correct inpatient antibiotic; Q6, antibiotics discontinued within 24 hours of surgery; Q9, urinary drainage

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(Foley) catheter removed on postoperative day 1 or 2; and Q12, venous thromboembolism prophylaxis within 24 hours of surgery (Fig. 1). However, the differences did not reach statistical significance.

Reported means for urban acute care facilities were near national norms. There were no significant differences between rural and urban facility groups.

Mean SCIP measure compliance of rural facilities in West Virginia were therefore statistically within national norms and not different from those of urban facilities. However, the fact that averages were lower in 4 of the 10 areas indicates that there were some rural facilities that had unacceptably low levels of SCIP measure compliance. While as a group the quality of surgical care in rural hospitals reaches national standards, there is evidence that individual facilities fall below accepted guidelines.

The missing data from rural hospitals are troubling. Of the 19 hospitals, nine had no SCIP data. Excluding the data for heart surgery, five had one or more data elements missing. Not all facilities perform inpatient operations, and our research did not include surveying each hospital to see whether they offered surgical services. Missing data from the other 10 are more difficult to explain, as the SCIP measures are generally applicable to nearly all surgical operations. We can only speculate that rural facilities may not have the resources to devote to detailed review of all surgical cases. Because SCIP compliance is a requirement of federal payment programs, reported data are certain to be more complete in the future.

This study is among the few that examines the quality of rural surgical care. The quality of rural surgical care is important because rural surgeons and facilities are essential to the American health-care system. Rural counties cover 72 per cent of the United States land area and include 15 per cent of the population of the United States.¹ The facilities, providers, and the communities they serve face enormous health challenges. Many hospitals have financial limitations, with many reporting negative operating margins. Rural communities acutely feel the overall shortage of general surgeons, creating surgical “deserts” in counties having no practicing surgeon. Surgeons in urban areas are often in solo and two-person practices where they face every-night or every-other-night call. Call is the strongest factor causing a practitioner to leave a rural practice.¹

Demographic forces have left a rural population that is older, sicker, poorer, has more unemployment, and less likely to have adequate health insurance. Urban referral hospitals often attract patients who have the resources to travel to larger cities for care, so the home facility loses an important source of revenue. The result is a health environment that is resource poor and the daily challenge is to keep the doors open and meet the community’s health needs.¹

Therefore, devoting resources for formal quality programs, like the National Surgical Quality Improvement Program of the American College of Surgeons, have not been a high priority for rural surgeons and hospitals. Dedication to quality and improvement is a core value for all surgeons, part of his or her responsibility to the patient and the community. Definition of quality requires measurement and review of outcomes. Resource limitation can neither be an excuse from quality activities, nor substandard outcome. Measurements that

fail to meet national norms are an opportunity to improve practices and patient care. Participation in performance improvement and patient safety activities are necessary features of modern surgical practice, both in rural and urban communities.

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Fig. 1. Mean percent compliance with Surgical Care Improvement Project quality measures in urban and rural hospitals, with 95 per cent confidence intervals. Vertical dashed line indicates the national norm for each measure.