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## Postoperative Complications and Hospital Readmissions in Surgical Patients:

### An Important Association

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Hospital readmission rates have assumed a central position in the discussion of critical health care quality metrics for American hospitals. This primarily was triggered by the passage of the Patient Protection and Affordable Care Act in October 2010.<sup>1</sup> Contained within this piece of legislation is §3025, the Hospital Readmissions Reduction Program. Under this provision, hospitals with a high rate of 30-day readmissions for Medicare patients with pneumonia, myocardial infarction, or congestive heart failure will be penalized with decreased Medicare payments for all Medicare discharges. The Affordable Care Act was challenged for being unconstitutional, but in the summer of 2012, the Supreme Court upheld the law and shortly thereafter the Centers for Medicare & Medicaid Services announced the prospective penalties for hospitals with excess 30-day readmissions that would be in effect in October 2012.<sup>2</sup> The scheduled penalties escalate in future years and will apply to broader classes of conditions including patients undergoing surgical procedures.

There clearly is a business case for focusing on the readmission metric. From 2003 to 2004, 19.5% of all Medicare beneficiaries who were discharged from a hospital were readmitted within 30 days, leading to an estimated cost of \$17.4 billion.<sup>3</sup> Given the current health care environment, reducing readmissions by just a small percentage will have a large impact on hospital budgets and operations. However, there has been considerable debate regarding whether a hospital's 30-day hospital readmission rate is indeed a valid quality metric reflective of the care delivered at an individual institution. Understanding factors associated with 30-day readmission after surgical procedures will therefore have significant implications for both quality improvement and cost savings.

The study by Lawson et al<sup>4</sup> uses a unique coupling of the ACS/NSQIP and Med/Par databases to look at 30-day postoperative hospital readmissions in patients undergoing surgical procedures. The authors point out the patient demographics and operative profiles that are associated with an increased risk of hospital readmission. More importantly, they establish a link between the occurrence of postoperative complications and the risk of readmission. The current study demonstrates almost a 4-fold increased risk of readmission for patients who have 1 or more postoperative complications. Another important piece of information they point out is that 25% of patients who are readmitted are readmitted to a hospital different from the one where their index procedure was undertaken.

This work demonstrates that the costs of a readmission are increased significantly if a patient has had a postoperative complication. The authors also model the potential impact of

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complication reduction on the hospital readmission rates and potential cost savings for Medicare patients. Using relatively modest reductions in complication rates of 5% to 20%, the authors demonstrate a corresponding decrease in readmissions ranging from 2092 to 8369 per year and cost savings for Medicare ranging from \$31 million to 124 million per year.

One potential shortcoming of this work is the focus on 30-day postoperative readmission rates rather than 30-day postdischarge readmission rates. The authors point out that this is the time frame that is utilized for monitoring other postoperative outcomes and occurrences for surgical procedures. In addition, there is clear evidence that most readmissions are clustered in the early postdischarge period and thus would be captured in the 30-day postoperative period. Nonetheless, although this study presents compelling evidence for using the 30-day postoperative time frame, §3025 of the Affordable Care Act focuses on 30-day postdischarge readmissions. In reality, this is probably splitting hairs. As reimbursement strategies for procedural based episodes of care move from a fee-for-service reimbursement scenario to a bundled payment strategy, payers are likely to push providers and health systems to assume a longer readmission risk than the 30-day postdischarge time frame outlined in the Hospital Readmissions Reduction Program. Therefore, understanding risk factors for unplanned readmissions will have even more importance in this setting.

Surgical patients share many of the same comorbidities that medical patients have, which place them at risk for adverse outcomes and unplanned readmissions. However, the intervention that surgical patients undergo, in and of itself carries a known risk of complication, which places the patient at an even higher risk for prolonged hospital stays and early hospital readmission. In most situations, the intervention (an operation) is a planned event that provides surgeons a unique window to intervene and modify underlying risk factors *before* surgery to minimize the risk of adverse outcomes. The data presented in this study provide further evidence that interventions designed to limit hospital readmissions in surgical patients must include a strong focus on complication reduction/prevention. These efforts coupled with improved coordination of patient transition from the inpatient to the outpatient setting and more robust and carefully coordinated follow-up care provide real promise for limiting the number of unplanned readmissions after surgical procedures.

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