Decreasing readmissions after lung resection: The carrot or stick approach?

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In this issue of the *Journal*, Rajaram and colleagues¹ highlight readmission rates as an important aspect of postoperative care in lung cancer that has received less attention than more conventional quality indicators such as perioperative mortality and length of stay. This is an important contribution to the field and identifies postoperative complications as the principal determinant of readmission risk after lung resection. This observation reinforces the findings of Hu and coworkers² and of Lucas and colleagues³ while also identifying a potentially targetable group to decrease readmission rates.

The reasons for the recent intense national scrutiny of readmissions after elective surgery are manifold; some are obvious and others less so. First, attempting to decrease readmissions is unquestionably good practice, as numerous publications have shown that they are associated with a higher mortality and an increased cost of care. Second, with the increasingly widening availability of medical outcomes data in the public domain, readmissions provide another firm metric that can be used by high-performing providers as a merit badge and by others as a strong incentive to improve. Such efforts are now routinely supported and encouraged by such national organizations as the Society of Thoracic Surgeons. Third, recent work from my own group has shown that even after accounting for baseline risk as well as short-term perioperative mortality, readmissions are markers for a higher risk of long-term mortality. The biologic reasons for this are unclear, but the finding reinforces the importance of taking readmissions seriously. Finally, from a payer's perspective, readmissions offer an ideal point for intervention. The Centers for Medicare and Medicaid Services has already established procedures for reduced payments for readmissions for certain medical diagnoses and is adding elective surgical procedures to the list. The overall perceived goal with such disincentives is to improve quality of care; however, any measures that save the payers money are likely to be adopted rapidly in the near future.

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Central Message

Identifying prospective interventions to prevent readmission are necessary in addition to penalizing institutions for readmissions.

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Readmissions after elective surgery can be broadly classified as expected or unexpected. This is especially true if a 90-day time horizon is being considered. The average patient undergoing surgery for lung cancer is nearly 70 years old and has 2 to 3 comorbidities. Western population-based studies have shown that a similar elderly population carries a 14% to 23% baseline annual risk of hospital admission for medical problems.⁴ In addition, with 15% to 25% of patients with clinical stage I lung cancer having their disease upstaged after surgery and thus requiring adjuvant therapy, further hospitalizations for placement of venous access devices or management of adverse effects of chemoradiotherapy are relatively common in this subset. It is important to clearly label such admissions as unrelated, not only to avoid incurring unreasonable monetary penalties but to present a realistic estimate of true surgical morbidity.

Recent work has also focused on the potential preventability of postoperative readmissions. Dawes and colleagues⁵ reviewed 3789 patients discharged after general surgical procedures during a consecutive 2-year period. Two observers categorized readmissions as preventable or not. Among the 8.3% of patients readmitted within 30 days, only 21% of readmissions were deemed preventable. Although a similar analysis was not available for thoracic surgical patients, this observation defines the heart of the problem. It is almost certain that the average cohort of patients with lung cancer undergoing surgery will be

exposed to a certain baseline risk of postoperative complications and consequent readmissions directly attributable to surgery. Though such a risk can be potentially diminished by ideal patient selection and preoperative optimization, it cannot be reduced to zero. Thus instead of labeling all unexpected readmissions (related to surgery) as avoidable events, the correct approach is to define an expected risk according to population-based studies and then measure performance by means of observed to expected ratios. This is a well-accepted model already in use in numerous health care scenarios and should also be the strategy of choice used by payers, rather than blanket penalties for all readmissions. A strong and urgent effort needs to be made at the level of national societies for such an evidence-based approach. Finally, it is also conceivable that disincentives for readmission may make the original treating institution reluctant to readmit even when absolutely indicated, leading to fragmented care at another institution, and in the worst possible case lack of any inpatient care.

Future investigations should build on the work from the article of Rajaram and colleagues¹ and prospectively study approaches to decrease readmission rates by focusing on the high-risk population. As Rajaram and

colleagues¹ have suggested, reducing complications and early planned postoperative contact with providers may be one strategy. In addition, better patient education and electronic contact and monitoring in the early postoperative period may be cost-effective approaches. Efforts to support such research are likely to be productive and viewed positively and should not be neglected in favor of punitive measures only.

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