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group. There was no direct comparison of perioperative outcomes between thoracotomy and VATS, however, and the overall comparison between epidural and liposomal bupivacaine showed no difference in perioperative outcomes.

In the article under discussion of Zhao and colleagues,³ there was a 3-fold increase in perioperative complications in the muscle-sparing thoracotomy group compared with the VATs group. Much of the statistical difference was driven by chylothorax; however, the trend across all the respiratory complications measured favored a VATS approach and likely contributed to the overall difference in complication rate. Furthermore, this article does not exist in a vacuum but is part of a growing body of evidence, already well referenced and cited in the article by Zhao and colleagues,³ showing improved perioperative outcomes when rib spreading is avoided.

For many patients, a thoracotomy is still necessary, and therefore techniques to minimize the associated morbidity, such as muscle sparing approaches, and a focus providing aggressive, adequate analgesia, should continue to be explored and encouraged. Mehran and colleagues are right to highlight that in their letter and are to be commended for their strong advocacy in this arena and in their advancement of new techniques, such as the use of liposomal bupivacaine. The article by Zhao and colleagues,³ however, is an important contribution to the existing body of evidence that shows superior short-term outcomes for a minimally invasive approach. When appropriate, such an approach should be preferred to rib-spreading techniques.

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PRECISE CAPTURE OF THORACIC MORBIDITY AND MORTALITY: ESSENTIAL TO THE PROCESS AND CULTURE OF QUALITY IMPROVEMENT

To the Editor:

We read with great interest the recent timely review by Brandt and colleagues,¹ focusing on quality metrics for lung cancer surgical care in the preoperative, intraoperative, and postoperative settings.

The difficulty in defining hard and fast quality metrics in thoracic surgery arises because quality improvement (QI) by definition is an active “process” in constant flux. For success of such a process, it must permeate the institutional structure of care delivery at every level. In this respect, thoracic surgeons must lead by example, developing a structured cultural shift from “blame” for postoperative adverse event outcomes to institutional self-reflection with the aim of continuous QI. This begins with a specialty-specific measurement tool at the foundation to maximize the precision with which conclusions can be drawn on the basis of collected data.

In this context, the authors may find the Canadian Thoracic Surgical approach to implement the Donabedian classification of structure, process, and outcomes to thoracic quality assessment of interest. The Thoracic Surgery Morbidity and Mortality (TMM) data reporting and recording structure developed by Seely and colleagues² is at the heart of the method. Initially derived from the Dindo-Clavien classification of postoperative adverse events based on their severity, the tool has been externally validated for use in the thoracic surgery population.³ TMM has been compared directly with the National Surgical Quality Improvement Program, and certain benefits include the capture of important thoracic-specific postoperative adverse events, such as prolonged air leak.⁴ In addition, selection bias inherent in reporting of health outcomes with routine medical records data sources is minimized secondary to the structured 100% data capture process, in contrast to the proportional sampling technique of case reporting with National Surgical Quality Improvement Program. In this way, TMM minimizes the risk of nondifferential misclassification of adverse event outcomes in patients with lung cancer.⁴

As reported by Dr Brunelli and colleagues,⁵ who also wrote the editorial commentary for this review article on the importance of incorporating patient experience and cost assessment into QI, there is a direct association

FIGURE 1. A, Anna L. McGuire, MD, MSc, FRCSC, Thoracic Surgeon, Clinical Assistant Professor, University of British Columbia, Department of Surgery, Division of Thoracic Surgery, Vancouver Coastal Health Research Unit, Vancouver General Hospital, Director of Thoracic Surgical Undergraduate Medical Education, Minimally Invasive Thoracic Surgery Fellowship Director. B, John Yee, MD, FACS, FRCSC, Head of Thoracic Surgery, Director BC Lung Transplant Program, Thoracic Surgeon, Associate Professor, University of British Columbia, Department of Surgery, Division of Thoracic Surgery, Vancouver Coastal Health Research Unit, Vancouver General Hospital.

between increasing severity of the TMM classification of adverse events and financial expense of care delivery. Although this cost association may seem intuitive, accurate data capture and reporting are essential to direct financial and human resources to close the QI loop and address institutional patient needs objectively.

We commend the authors for this wonderful review on the important and timely topic of quality metrics in lung cancer surgical perioperative care (Figure 1). By promoting a specialty-specific culture of QI and self-reflection, thoracic surgeons have an opportunity to lead by example in their local institutions.

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**ACCURATE DATA
CAPTURE, ESSENTIAL
BUT ONLY THE FIRST
STEP IN QUALITY
IMPROVEMENT**

Reply to the Editor:

Drs McGuire and Yee provide thoughtful comments in a letter to the Editor responding to the excellent contribution from Brandt and colleagues¹ focused on quality in lung cancer surgery. They emphasize an institutional focus on continuous quality improvement supported by a specialty-specific measurement tool, with the Thoracic Surgery Morbidity and Mortality (TMM) developed in Canada provided as an effective example. This TMM system classifies adverse events based on their