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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References

1. Brandt WS, Isbell JM, Jones DR. Defining quality in the surgical care of lung cancer patients. *J Thorac Cardiovasc Surg.* 2017;154:1397-403.
2. Seely AJE, Ivanovic J, Threder J, Alhussaini A, Al-Shehab D, Ramsay T, et al. Systematic classification of morbidity and mortality after thoracic surgery. *Ann Thorac Surg.* 2010;90:936-42.

3. Ivanovic J, Threder J, Alhussaini A, Al-Shehab D, Ramsay T, Gilbert S, et al. Testing the reliability and reproducibility of the Ottawa Hospital Thoracic Morbidity and Mortality classification system. *Ann Thorac Surg.* 2011;91:387-93.
4. Ivanovic J, Seely AJE, Anstee C, Villeneuve PJ, Gilbert S, Maziak DE, et al. Measuring surgical quality: a comparison of postoperative adverse events with the American College of Surgeons National Surgical Quality Improvement Program and the Thoracic Morbidity and Mortality System. *J Am Coll Surg.* 2014; 218:1024e1031.
5. Brunelli A, Drosis P, Dinesh P, Ismail H, Bassi V. The severity of complications is associated with postoperative costs after lung resection. *Ann Thorac Surg.* 2017; 103:1641-6.

<https://doi.org/10.1016/j.jtcvs.2017.10.046>

**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

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relative severity and has been validated in a thoracic surgical population.

In the United States, the Society of Thoracic Surgeons General Thoracic Surgery Database (GTSD) is the most robust and commonly used data-collection instrument in thoracic surgery. The GTSD is used to generate participant-specific feedback reports that are used to track local outcomes and facilitate quality improvement initiatives. In addition, aggregate data from the GTSD have been used to develop operative risk models and performance metrics in thoracic surgery.^{2,3} Efforts are made to continuously improve the value of the database by ensuring it reflects current practice and captures the outcomes most important to patients, providers, and other stakeholders. Recent efforts have focused on adding long-term survival data, with the incorporation of costs and patient-reported outcomes on the horizon.⁴ Grading of the severity of complications, as done in the Canadian TMM system, is an adaptation that would benefit the GTSD.

If we don't track our outcomes, we are incapable of improvement. However, accurate measurement of outcomes through a specialty specific database is only the beginning. Surgeons need to use these data to examine their own practices to improve local processes and culture, which ultimately will improve outcomes for patients. An increased emphasis is needed on the development and implementation of quality improvement initiatives that are based on measured outcomes. Without this process of self-reflection and continuous quality improvement, as advocated by Drs McGuire and Yee, our rich specialty-specific data are of little value.

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References

1. Brandt WS, Isbell JM, Jones DR. Defining quality in the surgical care of the lung cancer patient. *J Thorac Cardiovasc Surg.* 2017;154:1397-403.
2. Fernandez FG, Kosinski A, Burfeind W, Park B, DeCamp MM, Seder C, et al. STS lung cancer resection risk model: higher quality data and superior outcomes. *Ann Thorac Surg.* 2016;102:370-7.
3. Kozower BD, O'Brien SM, Kosinski AS, Magee MJ, Dokholyan R, Jacobs JP, et al. The Society of Thoracic Surgeons Composite Score for rating program performance for lobectomy for lung cancer. *Ann Thorac Surg.* 2016;101:1379-87.
4. Fernandez FG, Furnary AP, Kosinski AS, Onaitis MW, Kim S, Boffa D, et al. Longitudinal follow-up of lung cancer resection from the Society of Thoracic Surgeons General Thoracic Surgery Database in patients 65 years and older. *Ann Thorac Surg.* 2016;101:2067-76.

<https://doi.org/10.1016/j.jtcvs.2017.11.042>

SHORT-TERM OUTCOMES DO NOT CAPTURE THE REAL VALUE OF LUNG CANCER SURGERY

Reply to the Editor:

We thank Drs McGuire and Yee for their reflection on the importance of quality of care and quality improvement initiatives in our specialty.

Quality is a complex multidimensional construct that requires multiple metrics or even composite scores to measure. A single outcome such as mortality is not representative and can be misleading and counterproductive despite risk adjustment.

Morbidity is another frequently used indicator in thoracic surgery. However, this end point is plagued by problems of definition, recording, and weighing. This aspect is crucial because morbidity is currently used as an outcome indicator in quality initiatives endorsed by major organizations. For instance, it is one of the outcomes included in the composite performance score created by the European Society of Thoracic Surgeons to assess eligibility for the process of European Institutional Accreditation. The Society of Thoracic Surgeons and the European Society of Thoracic Surgeons have recently made a great effort in trying to standardize the nomenclature and definition of variables present in the 2 organizational general thoracic surgery databases, including the definition of the most common complications.¹ This is an important step that will help in the prospective collection and recording of this end point for future quality initiatives at institutional or organizational level. Still, in the majority of the published studies dealing with morbidity in thoracic surgery, the severity of complications is not graded and morbidity is defined more qualitatively than quantitatively. In many studies, complications often are defined as major cardiopulmonary complications without providing a clear explanation of what is meant as major. In a previous study,² we showed that 45% of the complications traditionally defined as major ones in the European Society of Thoracic Surgeons database were reclassified as minor by grading them with the Thoracic Morbidity and Mortality system.³

As suggested by McGuire and Yee in their letter, the use of specific grading systems like the Thoracic Morbidity and Mortality should be encouraged in our practice to improve standardization and meaningfulness of reporting and modeling of complications.

Nevertheless, in my opinion, despite all the refinements we can apply to the in-hospital traditional outcome indicators (ie, mortality and morbidity), they will never be able to reflect the real quality of our work in its entirety. We need to embrace the broader concept of value in healthcare.^{4,5} This must become the ultimate end point to assess our practice.