To the Editor:

We read with great interest the article by McClure and colleagues, who by means of a population-wide study reported the contemporary operative outcomes and mortality trends of acute type A dissection in Canada. Although late survival outcomes have improved, the operative mortality remained unchanged at 20% over the 12-year study period. Because the 1965 landmark study by DeBakey and colleagues reported a 40% operative mortality rate, it is reasonable to expect continual improvements in outcomes following evolution in surgical, anesthetic, and perfusion knowledge, as well as the implementation of standardized institutional protocols and a multidisciplinary approaches. However, this early mortality rate is comparable to other registries published during the past decade; for instance, the International Registry of Acute Aortic Dissection study (18%), the registries from Sweden (22.4%), Taiwan (19.6%), the United Kingdom (18.3%), Germany (16.9%), and the United States (21.6%). There are exceptions, of course, with selected individual surgeons and a few high volume centers publishing single-digit outcomes. From a patient and commissioning perspective, outcomes in these areas depend on geographic location and the vagaries of an on-call system. What should the mortality risk be for this emergency operation? Given a significant proportion of patients present with gross acute pathology, including life-threatening malperfusion and peri-arrest states, the mortality is unlikely to be comparable with elective mortality for equivalent operations; however, the question remains as to what the target mortality should be for a surgeon, institution, or region. Mortality rates that are too high may suggest delayed diagnosis, slow transfer

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FIGURE 1. A histogram of operative mortality for acute type A aortic dissection in literature. Red bars denote data from registry studies, whereas blue bars reflect data from a series of observational studies in the literature. The data from the respective registries are labeled in the diagram. The observational studies reviewed to develop Figure 1 are listed in Appendix 1. Sino-RAD, Registry of Aortic Dissection in China; GEERADA, German Registry for Acute Aortic Dissection Type A; IRAD, International Registry of Acute Aortic Dissection; UK, United Kingdom; USA, United States of America.
times, or lack of a significant aortic practice within the team. Mortality rates that are too low may suggest case selection or inequity in access to care for all. Publication of surgical turn-downs is rare but important to close the loop and understand heterogeneity in outcomes. Distribution curves of operative mortality based on 46 observational and registry studies are summarized in Figure 1. The data suggest it would be reasonable for institutions to benchmark against a 10% to 15% mortality for repair of acute type A aortic dissection. With improvements in time to presentation, diagnosis times, early medical management, and access to experienced surgical teams it might be expected that mortality could ultimately be reduced to approaching equivalent elective risk-adjusted mortality rates. Selected premier aortic centers may better this target without case selection; however, our obligation is to improve outcomes for the entire population. A hub-and-spoke transfer system is unlikely to be possible for all regions, especially when distances may be prohibitive to the transfer of acutely sick malperfused patients. It is incumbent on us all to find local solutions to local problems to improve outcomes for all. To fully understand the published outcomes of institutions and the quality of care offered to a catchment area it is important to record and define the multidisciplinary team process of surgical turn-down rates. Ultimately, international acceptance of the importance of organizing services will reduce regional heterogeneity of outcomes and overall mortality rates toward risk-adjusted elective data.

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APPENDIX 1. Observational Studies Reviewed to Develop Figure 1


TARGET IN RANGE—REPAIR OF ACUTE TYPE A AORTIC DISSECTION

Reply to the Editor:

Poon and Field provide insight and perspective on the article by McClure and colleagues, which presented a population-based study on the management of thoracic aortic dissections and thoracic aortic aneurysms and whose authors included members of the Canadian Thoracic Aortic Collaborative. Poon and Field’s Letter to the Editor focuses on the acute type A aortic dissection component of the Canadian analysis. The letter beautifully and ethically describes the variation in the results of acute type A aortic dissection by presenting a histogram of operative mortality. Here, disparity is a consequence of the complexity involved, including establishing a timely diagnosis, effective initial medical management, the availability of skilled surgical intervention, regional transportation capabilities and distance traversed, and access to advanced imaging technologies, medical devices, and critical care management. Justifiably, it is pointed out that during the 12-year period of the Canadian study, mortality remained unchanged at 20%, despite general improvement in the medical management and surgical care of these patients. It appears that the essential point of the letter is that you have to recognize and focus on location-specific limitations and move toward targeted local solutions and resolutions—including any disparity in access to care. They rightfully suggest that, although an uncommon occurrence, acute type A aortic dissection is as lethal as it is complex. However, the cardiovascular and thoracic surgeon is uniquely positioned to direct, if not also implement, care and management. Surgical treatment of acute type A aortic dissection, and its typical need for immediate intervention, should be a basic component of our thoracic surgery training programs. Inherent and critical to the care of these patients is the recognition of clearly delineated circumstances that necessitate transfer to a greater level of care, and, at times, the simple recognition of the futility of treatment. I believe the authors set a very reasonable bar for expected results, with a reasonable benchmark of 10% to 15% mortality after repair of acute type A aortic dissection; moreover, one recognizes that dedicated aortic centers, those with extensive resources, may do much better, and smaller facilities,