Commentary: “Isn’t cardiac surgery a team sport?”

Jennifer S. Lawton, MD

From the Division of Cardiac Surgery, Department of Surgery, Johns Hopkins University, Baltimore, Md.

Disclosures: Author has nothing to disclose with regard to commercial support.

Received for publication March 10, 2019; accepted for publication March 11, 2019; available ahead of print April 17, 2019.

Address for reprints: Jennifer S. Lawton, MD, Johns Hopkins Hospital, 1800 Orleans St, Zayed 7107, Baltimore, MD 21287 (E-mail: jlawton4@jhmi.edu).

J Thorac Cardiovasc Surg 2020;159:536-502

0022-5223/\$36.00

Copyright © 2019 by The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2019.03.021>

In this issue of the *Journal*, Mori and colleagues¹ provide a thought-provoking comparison of risk of death after hospital discharge in cardiac surgical patients discharged to home versus patients discharged to locations other than home. When comparing these very different populations (significant differences existed in nearly all baseline comorbidities, left ventricular ejection fraction, status of procedure, presence of shock, and complexity of cases), it is intuitively apparent that they would have different outcomes following discharge. Consideration should be given to comparing outcomes out to 90 days in propensity-matched patients that were discharged to home or not to determine if differences in mortality persist in similar patient groups.

Mori and colleagues¹ conclude that the postoperative high-risk phase (of mortality) persisted for 80 days only for patients who were not discharged to home, supporting the use of 90-day outcome measure as a quality measure. This statement has very broad implications and is quite controversial, given the fact that the article does not report such details as discharge location, cause of death (a significant drawback in the current 30-day mortality quality measure), the frequency of recidivism of drug abuse in patients, or the level or presence of social support for patients. Mori and colleagues¹ excluded 4 patients discharged to hospice. This is important to note, because it has been suggested that physicians may “game the system” by discharging patients from the hospital to a same-center rehabilitation facility or hospice to reduce in-hospital mortality and cost (shifting care facility²).

In many states, surgeon-specific outcomes are publicly reported. A common statement is that “cardiac surgery is a team sport,” and multidisciplinary teams work closely together to provide the best care (Figure 1). In some practices, unfortunately, the postoperative care for the patient is relinquished to providers in closed intensive care units, cardiologists, intensivists, or other care givers, thus potentially eliminating the surgeon from decision making. Outcomes therefore represent the entire team or institution, not solely the surgeon. Patient care after discharge is

Diagram depicting a multidisciplinary cardiac surgery team focused around the patient.

Central Message

High-quality cardiac surgery requires experienced multidisciplinary teams, and extension of outcome scrutiny for 90 days is beyond the scope of responsibility of such teams.

See Article page 528.

influenced by many factors that are beyond the scope of the multidisciplinary care surgical team (Figure 1). These factors include socioeconomic status, readmission to a different hospital lacking cardiac surgery care, medication compliance, home health visits, primary care providers, cardiologists, rehabilitation centers, family dynamics, and accidents (automobile crashes, falls, etc).³ Blackstone and colleagues⁴ noted that 30-day follow-up data are often not complete, creating an evident bias in all data without follow-up beyond hospital stay. Others have noted that the effect of the initial care provided around the intervention in the hospital is likely to decrease with time and that longer follow-up in cardiac surgical patients may be biased.⁵ The same authors found that benchmarking between hospitals changed depending on the length of follow-up compared, and that a 30-day time frame for benchmarking isolated coronary artery bypass grafting procedures is appropriate.⁵ When quality is linked not only to public reporting and reputation but also to reimbursement, the stakes become higher.

Another consideration in prolonged quality assessment is who will pay for support and pay for monitoring for 90 days? Despite the best intentions for care after discharge, outcomes may not be altered. At Johns Hopkins, we began a randomized control study to use a score⁶ to identify patients at risk for readmission following cardiac surgery. The treatment group received an extensive in-home visit from a nurse

FIGURE 1. Diagram depicting a multidisciplinary cardiac surgery team focused around the patient.

practitioner. With 2000 patients screened and 341 enrolled, preliminary analysis does not show a decrease in readmissions for the treatment group (Dr Sharon Owens, Assistant Director of Nursing for Cardiac Surgery, personal communication).

Mori and colleagues¹ report predictors for nonhome discharge, and when combined with Society of Thoracic Surgeons mortality risk, these can be used to predict the patients at highest risk. One unfortunate and unintended consequence is risk aversion by surgeons and institutions. It is therefore imperative that when quality is used for public reporting, for judging reputation, for linking to reimbursement, and, most importantly, for improving outcomes in our patients, it must remain within the scope of the multidisciplinary team and it must be expertly and honestly assessed and reported.

References

1. Mori M, Bin Mahmood SU, Zhuo H, Yousef S, Green J, Mangi AA, et al. Persistence of risk of death after hospital discharge to locations other than home after cardiac surgery. *J Thorac Cardiovasc Surg.* 2020;159:528-35.e1.
2. Lazar HL, Fitzgerald CA, Ahmad T, Bao Y, Colton T, Shapira OM, et al. Early discharge after coronary artery bypass graft surgery: are patients really going home earlier? *J Thorac Cardiovasc Surg.* 2001;121:943-50.
3. Maniar HS, Bell JM, Moon MR, Meyers BF, Marsala J, Lawton JS, et al. Prospective evaluation of patients readmitted after cardiac surgery: analysis of outcomes and identification of risk factors. *J Thorac Cardiovasc Surg.* 2014;147:1013-20.
4. Sergeant PT, Blackstone EH. Closing the loop: optimizing physicians' operational and strategic behavior. *Ann Thorac Surg.* 1999;68:362-6.
5. Siregar S, Groenwold RH, de Mol BA, Speekenbrink RG, Versteegh MI, Bruinsma GJ, et al. Evaluation of cardiac surgery mortality rates: 30-day mortality or longer follow-up? *Eur J Cardiothorac Surg.* 2013;44:875-83.
6. Kilic A, Magruder JT, Grimm JC, Dungan SP, Crawford T, Whitman GJ, et al. Development and validation of a score to predict the risk of readmission after adult cardiac operations. *Ann Thorac Surg.* 2017;103:66-73.