efforts through statewide collaboratives will need to address the hospital structure and processes of care components of quality. Assessing value using appropriate metrics for both quality and cost will be essential to evaluating cardiac surgical care in the era of value-based reimbursement.

In conclusion, the authors should be commended for describing sources of charge variation among hospitals, while true costs remain an enigma. Standardized cost accounting is needed at hospitals and in databases to identify targets to optimize performance in the setting of value-based care.

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Commentary: Costs of coronary artery bypass grafting: We can do better

Nicolas H. Pope, MD, and Arman Kilic, MD

Healthcare spending remains a hot topic among patients, healthcare providers, payers, and policy makers. As such, it behooves providers to take an active role in examining healthcare costs, in an effort to provide the best patient

Nicolas H. Pope, MD, and Arman Kilic, MD

CENTRAL MESSAGE

Hospital charges varied widely in a statewide retrospective review of more than 7500 patients undergoing coronary artery bypass grafting. Importantly, only 10% of this variability was attributable to patient risk profile.

care while controlling spending. Part of the difficulty in surveying healthcare spending is that hospital charges and actual cost are not interchangeable; however, these variables can be normalized such that charges can serve as a

From the Division of Cardiothoracic Surgery, Medical University of South Carolina, Charleston, SC.

Disclosures: Dr Kilic serves on the medical advisory board for Medtronic. Dr Pope reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication April 12, 2021; revisions received April 12, 2021; accepted for publication April 13, 2021; available ahead of print April 20, 2021.

Address for reprints: Arman Kilic, MD, Medical University of South Carolina, 30 Courtenay Dr, Suite BM 279 MSC 295, Charleston, SC 29425 (E-mail: kilica@musc.edu).

J Thorac Cardiovasc Surg 2023;165:776-7
0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2021.04.039>

surrogate for cost. Coronary artery bypass grafting (CABG) is the most common adult cardiac surgery performed in the United States.¹ As such, Salenger and colleagues² chose to examine the factors that affect hospital charges within the state of Maryland to examine which patient comorbidities and events that occurred during the hospital stay were associated with increased charges.

Although risk profiles for patients undergoing CABG have continued to increase, Salenger and colleagues attribute only 10% of the variation observed in charges to patient risk profile. Patient characteristics contributing to this variation were older age, increased Society of Thoracic Surgeons predicted risk of mortality, congestive heart failure, anemia, and the presence of a preoperative intra-aortic balloon pump. Consistent with previously published data, postoperative complications were associated with higher hospital charges. Kilic and colleagues³ previously demonstrated the association between postoperative complications and increased cost after CABG, whereas Mehaffey and colleagues⁴ found not only an additive, but also an exponential increase in hospital cost with an increasing number of postoperative complications. Patient-centered factors that significantly increased cost in the study by Salenger and colleagues included postoperative renal failure, prolonged mechanical ventilation, and need for reoperation. Although patient outcomes remain paramount in the surgical treatment of coronary disease, it is important to recognize that these complications significantly increase cost, and therefore measures to avoid these complications are likely to improve both patient outcomes and lower the cost of healthcare.

Although prevention of postoperative complications improves patient-centered outcomes and controls cost, such prevention remains difficult. One driver of hospital charges in this study that may be more readily controllable is preoperative hospital length of stay. Interestingly, the relationship between preoperative length of stay and cost appears to be independent of presentation with acute coronary syndrome (and the cost associated with cardiac catheterization), suggesting that there may be an opportunity to significantly reduce hospital charges with the careful selection of patients in whom outpatient workup and readmission for surgery may be safe.

Challenges in restraining the cost of healthcare remain significant. Despite the increasing complexity of the patients who present for CABG, the expectation remains that we will deliver excellent outcomes while also providing value for the healthcare system at large. Careful examination of high-functioning institutions with excellent clinical outcomes and controlled hospital charges is needed to guide improvement at lower-performing centers.

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