Commentary: Failure to rescue or failure to measure?

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The use of clinical data has been the cornerstone of measuring quality of care and patient safety, and the majority of cardiac surgery societies and organizations rely on such data to ultimately improve the outcomes of cardiac surgery. The importance of clinical outcome metrics is seldom an area of controversy, as these help health care providers continuously measure the impact of quality improvement efforts. The concept of “failure to rescue” (FTR), defined as the failure to prevent a death resulting from a postoperative complication, was developed as a new quality of care metric among patients undergoing cardiac surgery.1,2

In this issue of the Journal, Alabbadi and colleagues3 sought to evaluate the risk-adjusted FTR trend using the National Inpatient Sample (NIS) dataset in more than 6 million cardiac surgery operations in the United States between 2000 and 2018. The selected treatable postoperative complications included in the study (n = 274,791) were pneumonia (53.4%), sepsis (18.7%), gastrointestinal bleeding (17.5%), deep-vein thrombosis/pulmonary embolism (9.2%), and cardiac arrest/shock (1.2%). More than 12% of these patients died postoperatively, mostly after sepsis and cardiac arrest/shock. The overall FTR rate decreased in early 2000 and subsequently increased in later years, probably due to the greater risk profile of patients. However, there was a significant decrease in both observed and risk-adjusted FTR among elderly patients (75 years and older) following deep-vein thrombosis/pulmonary embolism and sepsis during the study period. In contrast, FTR related to postoperative pneumonia and gastrointestinal bleeding increased substantially during the study period. There was no overall change in the risk-adjusted FTR following cardiac arrest. The authors went a step further and assessed the effect of hospital characteristics such as size, location, and teaching status on the FTR trend. They found that FTR rate was lower among large urban teaching hospitals compared with small nonteaching centers. The authors also performed a sensitivity analysis using the California state hospital discharge database, which includes a present-on-admission flag for each diagnosis in contrast to the NIS dataset. The risk-adjusted FTR analysis was similar in both groups.

The authors should be congratulated on their efforts to evaluate the rarely studied issue of FTR as a quality metric among a very large number of adult patients undergoing cardiac surgery. Their results suggest that, despite improvements in many aspects of postoperative management, there are areas that lag behind and warrant careful scrutiny to potentially decrease the rate of FTR among patients who undergo cardiac surgery. The FTR as a “proof-of-concept” is certainly compelling and merits further study. However, 2 major drawbacks of the present study are (1) the fact that the FTR metric may reflect mostly institutional expertise and variations in practice rather than patients risk factors, and preoperative patient’s clinical condition; and (2) the lack of data on the quantification of the cumulative impact of postcardiac surgery-specific complications on patient outcomes following cardiac surgery.
mortality such as acute renal failure, central nervous systems complications, and surgical-site infection. Furthermore, the authors acknowledge that the reliance on the NIS dataset may be subject to International Classification of Diseases coding errors, such as coding differences across providers and institutions, and changes in coding patterns over time. This could result in potential misclassification biases that are not rare in studies involving administrative discharge databases. The authors used an established Agency for Healthcare Quality and Research methodology, which may have inferior accuracy compared with other FTR methodologies such as the audited Society of Thoracic Surgeons clinical database.

Although this was not the objective of the present study, the mechanisms by which FTR rates have changed over time are still unknown. This information would help us to identify the strengths or weaknesses of the postoperative care systems in place at each institution and open avenues to change specific features of institutional protocols that may negatively influence the quality of patient care. Each center’s FTR rate can then be updated periodically as a quality of care metric among patients undergoing cardiac surgery. Despite some shortcomings, the study by Alabbadi and colleagues sheds some light on the importance of FTR as a quality assessment tool and which specific areas of postoperative care need to be closely examined to improve the outcomes of cardiac surgical patients.

References