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Commentary: Hospital cost reduction after coronary artery bypass grafting is a strategic priority

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Salenger and colleagues¹ make a valuable contribution to the literature on medical cost and its driver in a population undergoing coronary artery bypass grafting. It provides valuable insight by identifying 5 modifiable factors associated with interhospital variability in charges: preoperative length of stay, operating room time, postoperative renal failure, prolonged ventilation, and reoperation. When considering potential causes for these modifiable factors, it is probably fair to say that influencing them will not be effortless. The final 3 factors are outcomes/complications that may not be easily foreseen and that could be negatively influenced by both patient comorbid history and surgeon experience and skills. It is possible to intervene and alleviate the influence of the former by directing patients to preoperative rehabilitation programs, although, in some instances, preoperative length of stay may be extended. The latter is probably not modifiable short-term.

The authors chose to report and model average hospital cost, an easily communicable metric. Operative cases where complications occur will likely incur greater cost, which may lead to a right-skewed cost distribution. A possible consequence is that average cost might not be as representative as other cost summaries, such as median or upper quartile. Although statistical models such as quantile regression will permit modeling in such instances, the overall message might lose its simplicity and be less influential.

The authors made an excellent choice to provide standardized β coefficients from the regression models created.

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CENTRAL MESSAGE

Identifying modifiable factors that are drivers of the hospital cost in patients undergoing coronary artery bypass grafting provides actionable pathways toward overall cost reductions.

The advantage in doing so is that variables that went into creating these models can be compared head-to-head in the strength of their association with the cost.

Because charges were available from only 9 Maryland hospitals, it is evident that generalizability is limited. However, the study design, including its analytical blueprint, are valuable contributions. Future studies might consider aggregating cost/charges data from multiple hospitals with a wider national representation, which will allow for further analytical enhancements, such as the use of random effects models or the incorporation of hospital volume information in the thought process.

The authors should be congratulated on their excellent and timely contribution to the literature on coronary artery bypass grafting procedure cost and its determinants, both at the patient and hospital level. The identification of potentially modifiable factors may open actionable paths for improvements in the overall quality and cost of the procedure.

Reference

1. Salenger R, Etchill EW, Fonner CE, Alejo D, Matthew TL, Whitman G, et al. Hospital variability in modifiable factors driving coronary artery bypass charges. *J Thorac Cardiovasc Surg*. 2023;165:764-72.e2.