



DIVERSE INPUTS AND COMPLEMENTARY SKILLSETS LEAD TO



THE HIGHEST QUALITY PATIENT CARE IN CARDIOTHORACIC SURGERY INTENSIVE CARE UNITS

To the Editor:

We read with interest the study by Choi and colleagues,¹ which describes the authors' experience with an operating surgeon-led cardiothoracic surgery intensive care unit (CTICU). The article is timely because there is a shortage of intensive care physicians in the United States that is expected to worsen over time.² For this reason, it is important to consider alternative staffing models. The authors' data generally support high-quality care in an operating surgeon-led CTICU; however, we do not believe their study design allows for them to reach a conclusion of "equivalent care" compared with a traditional CTICU.

The study has many limitations that should be considered before generalizing the findings. First, they did not adequately describe how patients were triaged between the 2 ICUs. Presumably, operating surgeons had a strong role in deciding which patients were sent to the operating surgeon-led CTICU. This creates a high likelihood of selection bias that cannot be fully controlled for in a retrospective study. Second, although propensity score matching was used to reduce bias, there was minimal adjustment for patients' intraoperative course other than cardiopulmonary bypass time and operation type. The authors did not control for intraoperative blood transfusion, major bleeding, or other intraoperative complications. Third, the authors did not control for operating surgeon in their analysis, and this may have confounded their results. Fourth, the authors did not report on quality outcomes such as central line-associated blood stream infection, catheter associated urinary tract infection, and *Clostridioides difficile* infection, all of which are increasingly relevant in the era of public quality and safety reporting through outlets such as Vizient and *U.S. News & World Report*.

Furthermore, the authors did not highlight practical issues that should be considered in relation to operating surgeon-led ICUs. First, staffing ICUs with cardiothoracic surgeons who are not board certified in critical care is not consistent with Leapfrog's recommendations for ICU staffing.³ Leapfrog hospital safety grades are publicly reported to consumers and are also available to health care payors. Not having a board certified intensivist in the ICU daily would penalize hospitals in this regard. Second, it is unlikely that professional fee reimbursement for critical care services would cover the cost of an attending cardiothoracic

surgeon's salary in the United States. Third, because of bundled payments, operating surgeons generally cannot bill for critical care services related to operations that they have performed. This could create conflict in a small cardiothoracic surgery practice, where surgeons would be likely to provide critical care services for their own patients. Finally, the study does not account for the complexity of contemporary cardiac surgery practice in a large academic medical center. Medically complex patients are most likely to benefit from a dedicated, board-certified intensivist in the ICU.⁴

In our own experience, a collaborative model between cardiothoracic surgeons and intensivists allows for providers with complementary skillsets to provide the highest quality of care for patients. Diverse inputs lead to optimal decision making and the lowest cost of care.⁵

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Conflict of Interest Statement

Dr Mazzeffi has received consulting fees from Octapharma, Hemosonics, and Novo Nordisk that are not related to this article. All other authors reported no conflicts of interest.

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

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<https://doi.org/10.1016/j.xjon.2023.12.001>