Commentary: Post-30-day mortality: I guess no one is coming...

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

Received for publication Feb 25, 2019; revisions received Feb 25, 2019; accepted for publication Feb 26, 2019; available ahead of print June 12, 2019.

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J Thorac Cardiovasc Surg 2020;159:538-502

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2019.02.142>

When discussing post-30-day mortality in cardiac surgery, I am reminded of the classic scene from Mel Brooks' *Robin Hood: Men in Tights*, in which Robin's blind and faithful servant Blinkin is posting watch. When queried by his incredulous master as to what he was doing, Blinkin replied: "Guessing?...I guess no one is coming...."

For excellent and obvious reasons, mortality has become the primary metric by which cardiac surgical quality is judged. Although perhaps a crude and extreme measure—yet one that has been carefully informed by associated metrics in the current Society of Thoracic Surgeons composite quality measures¹—there is no question that mortality rates, appropriately adjusted, supply highly informative information regarding surgical quality. Recognition that the risk of surgically related mortality does not disappear with hospital discharge (and actually accounts for an additional 15%-36% mortality rate²) has shifted focus to 30-day mortality, which, with various modifications, has become the current gold standard. As results have improved, surgeons have accepted the challenge increasingly elderly and complex patients, for whom the admittedly arbitrary 30-day threshold may not be adequate to fully evaluate outcome. Reports of the early post-30-day mortality have been somewhat sparse and mostly focused on longer follow-up. Nonetheless, there is clear evidence for an ongoing risk hazard, as well as some indication that this may vary considerably by procedure.³⁻⁶

It is in this regard that the study of Mori and colleagues⁷ provides us with timely and interesting information. Using a well-validated state death index, they tracked the 1-year postdischarge mortality of 6894 cardiac surgical patients from their medical center stratified by discharge destination to home or to locations other than home. As might be expected, those patients discharged to other locations harbored more comorbidities, had more complications, and had a higher unadjusted mortality at every time point. Using robust modeling, they found not only that discharge to destinations other than home was associated with increased risk of death (hazard ratio, 1.36; 95% confidence

"I guess no one is coming."

Central Message

With the emergence of 90-day risk models to inform pay for performance, careful understanding of the patterns and determinants of post-30-day cardiac surgical mortality is increasingly important.

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interval, 1.15-1.61, $P < .001$) but that the pattern of risk varied dramatically between groups. Although there was a persistent risk of death for those discharged to home, that risk declined rapidly after discharge, whereas for those discharged elsewhere the risk of death plateaued, persisting for up to 90 days. A variety of preoperative, intraoperative, and postoperative risk factors were associated with discharge status.

The report is both informative and timely. Perhaps not surprisingly, simultaneous with this work, another group at the authors' institution has been tasked by the CMS (Center for Medicare and Medicaid Services) with the development of risk models for 90-day mortality after cardiac surgery, which are designed to be used to drive new pay-for-performance and bundled payment initiatives. Clearly, as the time interval from operation increases, the ability to reasonably distinguish between surgically related outcomes and underlying patient factors becomes increasingly difficult. Careful and nuanced study of these complex factors is essential to inform future and rapidly emerging metric development. We appreciate the work of Mori and colleagues⁷ for focusing our attention and launching inquiry in this direction.

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