Commentary: Can a health care quality lens clarify transfusion practice in perioperative cardiac surgery?

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Red blood cell transfusion occurs with disproportionate frequency in perioperative cardiac surgical care, as evidenced by large registry analyses in the United States and Canada.^{1,2} As high users of a costly and limited resource with potential risks, it is paramount that we incorporate the best available evidence into patient care. The Transfusion Requirements in Cardiac Surgery Trial (TRICS III) is the largest trial to date to examine a restrictive (hemoglobin <75 g/dL) versus a liberal (hemoglobin <95 g/dL) transfusion trigger in cardiac surgical patients.³ Compared with previous related trials, the TRICS III included far more patients, examined a patient-centered clinically relevant primary outcome, performed the intervention through the continuum of the patient perioperative journey, and had excellent protocol adherence in the respective treatment arms. While this is a major accomplishment in its own right, the trial was also able to recruit ahead of its estimated rate.

When TRICS III was incorporated into an updated meta-analysis of 13 trials comparing restrictive versus liberal transfusion in more than 9000 cardiac surgical patients, the risk ratio for mortality was essentially 1.⁴ In clinical practice, however, the decision to transfuse red blood cells is often based not exclusively on the hemoglobin concentration but also on best available physiologic indicators of end-organ tissue oxygenation.⁵ Nonetheless, with literature converging on an “answer” that restrictive transfusion in cardiac surgery is at least as safe as a liberal approach, new questions arise: Is routine transfusion to a liberal hemoglobin target in cardiac surgical care simply wasteful? To what extent can we justify individualized patient-level decision making in light of recent evidence and with mounting pressures to be stewards of limited health care resources? In this issue of the *Journal*, Hensley and colleagues⁶ take a unique vantage point by applying principles of health care quality management to answer these questions.

This review crystallizes our knowledge on transfusion practice in 3 ways. First, it provides a necessary overview of the

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Central Message

Should we use liberal or restrictive hemoglobin triggers for blood transfusion after cardiac surgery? Can we get it “just right”?

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blood transfusion trials in cardiac surgery to date and highlights the unique features of TRICS III that place it at the apex of this body of literature. Second, it challenges the common dogma that the targeted hemoglobin level should approximate the patient's age. As Hensley and colleagues⁶ note, in the 6-month follow up investigation by Mazer and colleagues,⁷ both the noninferiority between treatment groups for the primary outcome and the adverse effect of liberal transfusion in those with more advanced age persist. Finally, this work considers transfusion practice related to value-added activity for the patient and overall health care system, and in doing so brings us closer to answering the question “Can we get it just right?”

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