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Commentary: Culture trumps (transfusion) guidelines

Christopher T. Ryan, MD, and Todd K. Rosengart, MD

Transfusion indications have been the subject of intense debate in cardiac surgery and the broader medical community, with multiple, high-profile international randomized trials exploring this subject.¹⁻³ The focus of these studies has been the elucidation of an optimal hemoglobin concentration to use as a transfusion trigger, with recent trials demonstrating that a restrictive strategy (eg, hemoglobin ≤ 7.5 -8.0 g/dL) to be noninferior to a liberal strategy (eg, hemoglobin ≥ 9.0 -10.0 g/dL).¹⁻³ A second, growing body of literature is now affirming earlier suggestions that allogeneic transfusion of any kind is independently associated with diminished short- and long-term survival.^{4,5} Although lingering skepticism persists regarding the possibility of an associative rather than causal relationship between transfusion and mortality (ie, only ill patients get transfused), the growing number of randomized trials exploring this matter is increasingly putting this claim to rest. The actual pathophysiology underlying this relationship nevertheless remains uncertain, but may be related to immunogenic or other longer-term mechanisms.⁶ Given this mortality risk and shorter-term complications such as transfusion-related lung injury, transfusion-related sepsis, allergic reactions, costs, and resource consumption, the case seems to be well made that unnecessary transfusions are a bad thing. Why then are patients still receiving unnecessary transfusions?

Fitzgerald and colleagues⁷ report their findings using sophisticated statistical analyses to probe a dedicated, multi-institutional surgical and perfusion record database of 22,272 adult cardiac surgery patients seeking to isolate factors responsible for institutional differences in transfusion patterns. They note that interinstitutional

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CENTRAL MESSAGE

Cultural elements may affect the establishment of patient care best practices such as transfusion rates.

differences in transfusion practice could not be traced or explained by differences in the implementation of transfusion guidelines or even patient risk factors. A substantial portion of the interinstitutional variance they found remained unexplained after adjusting for these and other similar variables. The authors instead conclude that the cause of this variability may instead be organizational culture.

The influence of culture on provider behavior is an important element in considering the current avalanche of guidelines facing the medical community. In the context of the findings presented by Fitzgerald and colleagues,⁷ it seems clear that efforts focused on achieving effective cultural integrity and management proficiency are as critical, if not more critical, than good data in changing practices to provide better care. Likewise, it cannot be taken for granted that familiarity with research findings or guidelines will lead to changes in practice. This is particularly true for management changes such as modifying transfusion practices, which require coordinated input from numerous providers, including collaboration between surgeons, perfusionists, anesthesiologists, and intensivists.⁸ In this case, implementation of a culture change could, for example, be accomplished within a blood conservation team that establishes a local consensus for transfusion strategy before transfusion decisions need to be made for a specific patient. This a priori consensus building enables providers to make better collective decisions while freeing cognitive resources to optimize the remainder of the operation.^{9,10} However, this type of visible intervention is only effective if it is integrated within a culture characterized by a foundational commitment to

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continuous self-assessment and care improvement at the department and hospital levels.

Peter Drucker famously said, “culture eats strategy for breakfast.” Nowhere is that better depicted than in the challenges that persist in enacting the good science that now exists around best practices in blood transfusion.

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Commentary: Like politics, transfusion practice is local

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Ever growing numbers of studies have demonstrated an association between red blood cell (RBC) transfusion and adverse surgical outcomes and increasing costs after cardiac surgery.¹⁻³ Initiatives to reduce blood transfusions in cardiac surgery patients have included blood conservation practice guidelines from the Society of Thoracic Surgeons, Society of Cardiovascular Anesthesiologists, and European Association for Cardio-Thoracic Surgery/European Association of Cardiothoracic Anaesthesiology.^{4,5}

Liberal and restrictive transfusion approaches have been studied widely in cardiac surgery. The TRICS trial randomized 5243 moderate- to high-risk adult cardiac surgery patients to liberal and restrictive strategies. The results

CENTRAL MESSAGE

Wide center-level variability exists in the RBC transfusion practices after CABG surgery which is independent of patient characteristics. Further studies might explain this variation between institutions.

showed that the liberal approach was noninferior to the restrictive strategy regarding a composite endpoint of death, myocardial infarction, stroke, renal failure requiring dialysis, and fewer blood transfusions.⁶ The TITRe2 investigators also evaluated both transfusion strategies. The primary outcomes of a serious infection or an ischemic event between both groups showed no differences. However, more deaths occurred in the restrictive group. The authors concluded that the restrictive transfusion threshold was not superior to the liberal approach concerning

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