

From the Editor

Better Together: The 2021 STS/SCA/AmSECT/SABM Patient Blood Management Update

“Coming together is a beginning, staying together is progress, and working together is success.”

- Henry Ford

It has been 14 years since the seminal publication of the 2007 Perioperative Blood Transfusion and Blood Conservation Guidelines in Cardiac Surgery.¹ This collaboration between committees of the Society of Thoracic Surgeons (STS) and the Society of Cardiovascular Anesthesiologists (SCA) not only promoted 57 evidence-based recommendations relating to cardiac surgical blood transfusions and blood conservation but also demonstrated the true benefits of interprofessional cooperation in guideline development. The evidence was quite clear—multidisciplinary teams make better decisions regarding perioperative blood management. Therefore, endorsement from each of the professional organizations was essential in both the development and dissemination of these recommendations.

The subsequent 2011 guideline taskforce was expanded to include members of the perfusion community,² recognizing that most CPB-specific blood conservation strategies are supervised by perfusionists. The revision presented new evidence that renewed or altered the previous recommendations, consistent with the evolving literature base. Including perfusion collaborators on the taskforce provided additional expertise in most aspects of the recommendations, such as blood salvage and perfusion interventions. More importantly, this collaboration was imperative in supporting their integration into clinical practice. The guidelines were strategically disseminated through joint publications of surgical, anesthesia, and perfusion peer-reviewed journals. This mutual decision between societies was considered essential in fostering guideline and protocol discussions at the local level. Simply stated, cardiac surgical blood management is a team sport, and interprofessional engagement is a key to center-level success.

The benefits of this collaboration among the STS, SCA, and AmSECT soon extended beyond blood management. The STS Workforce on Evidence-Based Surgery established a perfusion taskforce. This working group of surgeons, anesthesiologists, perfusionists, and epidemiologists was charged with developing evidence-based guidelines related to the management of cardiopulmonary bypass during adult cardiac surgery. Many of these guidelines have



David Fitzgerald, Associate Editor



Robert A Baker, Associate Editor

already been shared in the areas of inflammation, temperature management, and anticoagulation.^{3–5} Additional guidelines in renal management will soon be available. As clinicians, we must recognize the value in using these tools to continually evaluate and promote quality patient care.

In 2018, the STS Blood Management Taskforce was reconvened to update the 2011 guidelines. Along with representation from the STS, SCA, and AmSECT, clinical leads from the Society in the Advancement of Blood Management were invited to the group. We celebrate the collective efforts of this multi-societal collaboration, as the recommendations are now available for your review. Literature searches were confined to the open period of publications (2009–2018) since the previous update. A total of 1,227 abstracts were identified, with 87 meeting the inclusion criteria for consideration. The relevant observational, experimental, and systematic reviews were rated for bias and used to formulate the proposed recommendations. Consensus was achieved by performing multiple rounds of voting for approval. Consistent with the previous manuscripts, recommendations were formulated using the ACC/AHA classification system, noting the importance that these groups have recently placed upon the use of registry data in generating recommendations.⁶ The document includes 23 new or updated recommendations in the topic areas of preoperative interventions and antiplatelet management, pharmacological agents, blood products and derivatives, perfusion interventions, blood salvage interventions, and management of blood resources. Together, these recommendations address the full spectrum of care for adult cardiac surgical patients.

Upon reading the recommendations, you will notice several changes in the levels of evidence from 2011, notably in the perfusion intervention section. The continued emergence of perfusion-related blood conservation research over the last decade has yielded higher levels of quality evidence for interventions such as RAP, ANH, and viscoelastic testing. Conversely, the use of modified ultrafiltration (MUF) in adults was downgraded from a Class I, Level A recommendation to a Class IIB, Levels B–R. Although such a change may appear to some as controversial, the strength of the recommendation is dependent on the quality of the published studies. This includes the number of studies, design, sample sizes, heterogeneity, and age of studies. The previous MUF recommendation incorporated evidence from pediatric studies. As such, the lack of quality evidence in adult MUF did not support the Class I recommendation. Examples such as MUF should remind us

all the growing need and emphasis for well-designed trials and to leverage registry data to make clinical practice changes possible.

The continued evolution of perfusion technology will bring the patients we serve both promise and opportunity. The purpose will drive the technology and techniques forward. Clinical practice guidelines may reduce the uncertain moments of change by assisting clinical teams in improving the quality and process of care. Such documents not only provide new knowledge to bridge the gap from the bench to bedside but also seemingly identify opportunities for additional research. Our collective success in implementing positive changes for our surgical community starts with each of us.

Review the guidelines. Discuss them with your colleagues. Foster interprofessional dialog on how these guidelines may influence your local policies and procedures for your team.

Better together.....

David Fitzgerald
Associate Editor

Robert A. Baker
Associate Editor

REFERENCES

1. Ferraris VA, Ferraris SP, Saha SP, et al. Perioperative blood transfusion and blood conservation in cardiac Surgery: The society of thoracic surgeons and the society of cardiovascular anesthesiologists clinical practice guideline. *Ann Thorac Surg.* 2007;83:S27–86.
2. Ferraris VA, Brown JR, Despotis GJ, et al. 2011 Update to the society of thoracic surgeons and the society of cardiovascular anesthesiologists blood conservation clinical practice guidelines. *Ann Thorac Surg.* 2011; 91:944–82.
3. Landis RC, Brown JR, Fitzgerald D, et al. Attenuating the systemic inflammatory response to adult cardiopulmonary bypass: A critical review of the evidence base. *J extra-corporeal Technol.* 2014;46: 197–211.
4. Shore-Lesserson L, Baker RA, Ferraris V, et al STS/SCA/AmSECT clinical practice guidelines: Anticoagulation during cardiopulmonary bypass. *J extra-corporeal Technol.* 2018;50:5–18.
5. Engelman R, Baker RA, Likosky DS, et al. The society of thoracic surgeons, the society of cardiovascular anesthesiologists, and the American society of ExtraCorporeal technology: Clinical practice guidelines for cardiopulmonary bypass—temperature management during cardiopulmonary bypass. *Ann Thorac Surg.* 2015;100:748–57.
6. Bakaeeen FG, Svensson LG, Mitchell JD, et al. The American Association for Thoracic Surgery/Society of Thoracic Surgeons position statement on developing clinical practice documents. *J Thorac Cardiovasc Surg.* 2017;153:999–1005.