

## Response to letter to the editor from Dubose and colleagues regarding the *Joint statement from the American College of Surgeons Committee on Trauma (ACS COT) and the American College of Emergency Physicians (ACEP) regarding the clinical use of Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA)*

The *Joint Statement from the American College of Surgeons Committee on Trauma and the American College of Emergency Physicians (ACEP) regarding the clinical use of Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA)* is intended to serve as a guide for the safe introduction and use of REBOA as a resuscitative tool for a select group of critically ill civilian trauma patients.<sup>1</sup> Patient safety and quality care are at the forefront of these recommendations and we stand behind the statement. In no way did we intend to diminish or impair the Department of Defense physician leadership's ability to implement combat casualty care clinical practice guidelines for REBOA implementation in deployed settings.

We admire and appreciate the numerous contributions to care of the injured patient that have emerged from the years of conflict in Iraq and Afghanistan. They are a testimony to what unity of purpose, resiliency and creativity can bring in the quest to preserve human life. Among these are the significant contributions, referenced in the document, by members of the US military in developing REBOA. The American College of Emergency Physicians (ACEP), American College of Surgeons (ACS) and all of the authors of this statement have been long-term, robust and reliable supporters of military medicine and combat casualty care. We were inclusive, multidisciplinary and collaborative in crafting the statement in an unbiased fashion and centered on patient safety.

Although predominantly written for civilian practitioners, our statement references the use of the device in the section entitled: *Special Circumstances: Deployed Military Settings*. The intent of this section was specifically to express our support for latitude in the deployed setting. This joint statement was extensively reviewed and approved by surgeons and emergency medicine physicians, some with extensive combat casualty care experience. We were careful in our use of language to say that it is a guideline to promote safe use of a relatively new technique. We think this is prudent and is aligned with the *Joint*

*Trauma System Clinical Practice Guideline* which states "Most of the current clinical literature on REBOA have been equivocal, with some studies demonstrating survival benefit, while others showing it may actually worsen mortality. Thus far, there has only been one prospective clinical study on REBOA, which showed no difference in survival when compared with open aortic occlusion". The Joint Trauma System Clinical Practice Guideline also states, "... there is currently a paucity of evidence to guide the specific length of time that the aorta may be safely occluded, limiting its application to locations where a surgical team is immediately available".<sup>2</sup>

We sincerely appreciate concerns regarding recommended training approaches for the use of REBOA. The COT offers the Basic Endovascular Skills for Trauma (BEST) course as a training platform, understanding that many options for training exist, and each institution (including the military) is responsible for determining requirements for credentialing. We support equivalent or higher levels of training to the BEST course. The BEST course was developed and continues to promulgate in a productive collaboration between the American College of Surgeons and members of the US military. We are proud of this relationship and the work that we have accomplished together.

In summary, we appreciate the authors' comments; however, we stand by the recommendations and fundamental message of this document which seeks to ensure patient safety with implementation of this new tool in injury care. We support an inclusive team approach including emergency physicians and surgeons who have sufficient training for REBOA placement in patients cared for in well-developed, coordinated trauma systems. We strongly support and encourage ongoing research, and data-driven performance improvement efforts to improve the evidence base on which we can further refine the indications, contraindications and optimal use of REBOA for patients with non-compressible torso hemorrhage. We support robust physician training for this new technology and safe

implementation as a bridge to definitive hemorrhage control.

Megan Brenner,<sup>1</sup> Debra G Perina,<sup>2</sup>  
Eileen M Bulger,<sup>3</sup> Robert J Winchell,<sup>4</sup>  
Christopher S Kang,<sup>5</sup> Sharon Henry,<sup>6</sup>  
Ronald M Stewart,<sup>7</sup> Leonard J Weireter,<sup>8</sup>  
Michael C Chang,<sup>9</sup> Michael F Rotondo<sup>10</sup>

<sup>1</sup>Department of Surgery, University of Maryland, R Adams Cowley Shock Trauma Medical Center, Baltimore, Maryland, USA

<sup>2</sup>Department of Emergency Medicine, University of Virginia, Charlottesville, Virginia, USA

<sup>3</sup>Department of Surgery, University of Washington, Seattle, Washington, USA

<sup>4</sup>Department of Surgery, New York-Presbyterian Weill Cornell Medicine, New York, USA

<sup>5</sup>Department of Emergency Medicine, Madigan Army Medical Center, Tacoma, Washington, USA

<sup>6</sup>Department of Surgery, University of Maryland, R Adams Cowley Shock Trauma Medical Center, Baltimore, Maryland, USA

<sup>7</sup>Department of Surgery, UT Health San Antonio, San Antonio, Texas, USA

<sup>8</sup>Department of Surgery, Eastern Virginia Medical School, Norfolk, Virginia, USA

<sup>9</sup>Department of Surgery, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA

<sup>10</sup>Department of Surgery, University of Rochester Medical Center, Rochester, New York, USA

**Correspondence to** Dr Ronald M Stewart, Department of Surgery, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, Texas 78229, USA ; [stewartr@uthscsa.edu](mailto:stewartr@uthscsa.edu)

**Contributors** All authors agreed to this submission.

**Disclaimer** The statements and views expressed are those of the authors and do not reflect the official policy or position of the US Army or the Department of Defense.

**Competing interests** MB reports grants from Department of Defense, during the conduct of the study; and stock options from Prytime Medical Inc. outside the submitted work. Other authors have no competing interest to declare.

**Provenance and peer review** Not commissioned; internally peer reviewed.



### OPEN ACCESS

**Open Access** This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

© Article author(s) (or their employer(s) unless otherwise stated in the text of the article) 2018. All rights reserved. No commercial use is permitted unless otherwise expressly granted.



**To cite** Brenner M, Perina DG, Bulger EM, et al. *Trauma Surg Acute Care Open* 2018;**3**.

Received 2 February 2018

Accepted 5 February 2018



- ▶ <http://dx.doi.org/10.1136/tsaco-2017-000154>
- ▶ <http://dx.doi.org/10.1136/tsaco-2018-000167>

*Trauma Surg Acute Care Open* 2018;**3**: doi:10.1136/tsaco-2018-000170

#### REFERENCES

- 1 Brenner M, Bulger EM, Perina DG, *et al*. Joint statement from the American College of Surgeons Committee on Trauma (ACS COT) and the American College of

Emergency Physicians (ACEP) regarding the clinical use of Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA). *Trauma Surgery & Acute Care Open* 2018;**3**:e000154–.

- 2 Pasley J, Cannon J, Glaser J, *et al*. Joint Trauma System Clinical Practice Guideline (JTS CPG). 2017 [http://www.usaisr.amedd.army.mil/cpgs/REBOA\\_%2006Jul2017CORRECTED.pdf](http://www.usaisr.amedd.army.mil/cpgs/REBOA_%2006Jul2017CORRECTED.pdf) (accessed 29 Jan 2018).