Cardiothoracic surgical critical care certification: A future of distinction

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ABSTRACT

Cardiothoracic surgical critical care has emerged as a unique area of practice within cardiothoracic surgery. Leaders of multidisciplinary, high-performing teams are uniquely educated, trained, and skilled surgeons. Certification in this specialty by the American Board of Thoracic Surgery is a recognition of their distinction. A foundational framework is proposed toward this goal. (J Thorac Cardiovasc Surg 2016;152:34-6)

Areas of core competency in cardiothoracic surgical critical care.

Central Message

Certification in cardiothoracic surgical critical care is essential for promotion of professional identity, and for retention and recruitment of CTICU team leaders. A proposed mechanism for certification is discussed.

Perspective

Cardiothoracic surgical critical care certification is a recognition of a uniquely educated, trained, and skilled class of surgeons in a unique specialty.

See Editorial Commentary page 37.

In the October 2015 issue of the *Journal*,¹ Dr Katz provides a timely reminder of the continuing evolution of the scope and area of practice of cardiothoracic surgical critical care (CTSCC). Cardiothoracic surgical intensive care units (CTICUs) remain active areas of complex, critical, and high-risk surgical practice. The patient population is predominantly postoperative (and occasionally preoperative) surgical patients. The procedures that these patients undergo (conventional open surgical, minimally invasive, video- or robot-assisted, or even at the bedside) are highly specialized, technologically advanced, and highly skilled

surgical procedures involving the vital organs within the chest.

This unique area of surgical practice also involves efforts by members of several other healthcare disciplines and specialties, all working together as a single high-performing team toward the successful recovery of the patient's cardiopulmonary function, in the context of an improved duration and quality of life.² This multidisciplinary team is led by a uniquely educated, trained, and skilled surgeon with unparalleled experience in this specific area of surgical practice.^{3,4} Heretofore, the lack of uniform standards for the certification of such surgeon leaders of the CTICU teams is a reason for the current situation, with a heterogeneous mix of nonsurgeon clinicians (certified by other boards, such as anesthesiology, critical care medicine, and others) assuming leadership roles in CTICUs, with varying degrees of success.⁵⁻⁷ This status quo calls our attention to the statement on principles set forth by the American College of Surgeons,⁸ as well as the mission statement

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Abbreviation and Acronyms

- AATS = American Association for Thoracic Surgeons
- ABTS = American Board of Thoracic Surgery
- CTICU = cardiothoracic surgical intensive care unit
- CTS = cardiothoracic surgery
- CTSCC = cardiothoracic surgical critical care

from the American Board of Thoracic Surgery (ABTS).⁹ Both of these professional organizations stipulate that “the surgeon is responsible for the patient’s safety throughout the preoperative, operative, and postoperative period,” including critical care management.^{10,11}

The uniqueness of managing such complex patients in the high-risk environment of the CTICU has long been recognized by the American Association of Critical Care Nurses, which has introduced a separate certification (cardiac surgical certification) for critical care nurses who have spent a minimum number of hours providing care for cardiothoracic surgery (CTS) patients.¹² Of note, the absence of a formal, comprehensive didactic or clinical educational and/or training curriculum for such nurses has been addressed in Europe recently through the establishment of a common educational platform across the continent for the professional development of cardiovascular nurses in each member country.¹³

In addition, candidates for the Surgical Critical Care Program Directors Society’s surgical critical care fellowship have been required to spend a brief rotation in a cardiothoracic surgical critical care unit, where they learn from cardiothoracic surgeons the unique, specific, and complex details of this area of practice.¹⁴ Of note, at present, those cardiothoracic surgeons themselves cannot be certified in this same area by the board governing their specialty.^{15,16}

In light of this situation, the ABTS has maintained its public disapproval with the exclusion of fully trained cardiothoracic surgeons from certification in CTSCC.¹⁷ This commendable position reflects the dissatisfaction with the status quo within the global cardiothoracic surgical community^{18,19} (personal communication, Andreas Markewitz, MD, PhD, May 2014 and Jerry Baum, MD, PhD, November 2015). Recent efforts and initiatives by the ABTS and the American Association for Thoracic Surgeons (AATS) reflect the desire for change and shared vision within the CTS global community of an established robust mechanism for the certification of fully educated and trained cardiothoracic surgeons in this subspecialty.^{15,20}

According to Dannemiller and Jacobs,²¹ dissatisfaction with the status quo and a vision for the future are 2 of the 3 essential elements for effecting positive organizational change. The third element is the establishment and implementation of concrete steps toward realizing this goal. The combined effect of these 3 forces is sufficient to

Scientific Knowledgebase	<ul style="list-style-type: none">• Developmental, Surgical and functional anatomy• Cardiopulmonary Physiology, Pathophysiology• Cardiopulmonary Pharmacology• Surgical technique and Complications• Disease-specific postoperative management
Practical and Experiential Knowledgebase	<ul style="list-style-type: none">• Monitoring and Data Gathering• Systems-Based Management• CTICU-Specific Issues: Low Cardiac Output Syndrome, Mechanical Circulatory Support, Multi-System Organ Failure• CTSCC-specific Procedures : (Bronchoscopy, Thoracentesis, Intra-Aortic Balloon Pump Insertion, Cannulation, Emergent Re-Sternotomy, etc.)
Care Management Strategy	<ul style="list-style-type: none">• Patient Safety• Patient-Centered Care• Goal-Oriented Management• Risk Assessment and Stratification• Outcomes Management• Care Coordination
Non-Technical Skills	<ul style="list-style-type: none">• Leadership, Communication and Team Building• Decision-Making Methodology• Shared Decision-Making• Team Resource Management• Crisis Management
Professional and Organizational Skills	<ul style="list-style-type: none">• Medical Ethics• Utility and Futility of Care• Quality Indicators• Integration into Healthcare System• Health Literacy

FIGURE 1. Suggested list of core competencies in the practice of cardiothoracic surgical critical care. CTICU, Cardiothoracic surgical intensive care unit; CTSCC, cardiothoracic surgical critical care.

overcome the resistance or cost of change. The CTS global community looks forward to the emergence and implementation of a foundational framework from the governing organizations of the specialty, such as the ABTS, that outlines the specific areas of core competency essential for safe and effective practice of CTSCC (Figure 1) and can be adapted for application in different countries to fit with the local educational and regulatory environments.

This foundational framework, which may take the form of a “position statement,” should provide the platform for standardized educational, training, experiential,²² skill, and professional criteria for assessment of proficiency, either by fulfilling these requirements or by passing an examination. This framework also should provide mechanisms through which prospective candidates can attain proficiency in each core competency area, whether by completing a CTS residency or fellowship or by completing short, dedicated courses organized by the CTS parent organizations (such as the AATS patient safety or nonoperative technical surgical skills course). Precedents for such requirements abound, including courses for transcatheter aortic valve replacement and mechanical circulatory support. A specific number of continuing medical education hours may be required to reflect the completion of these educational activities. A logbook of a specific number, case mix, and CTICU procedures may be required as well.

In conclusion, the landscape of CTS and its subspecialties is changing rapidly, thanks to the growing transdisciplinary exchange of knowledge and technology. However, the fundamental mission of professional organizations remains the same: to define the requirements for education, training, and skills to practice a specific area of medicine, and to determine the competency of candidates to safely practice. Therefore, it becomes imperative for the governing organizations of any given specialty to adopt novel and adaptable mechanisms for certification that evolve with the specialty and to increase the number of uniquely trained and credentialed surgeons in this specific area of practice. This should support the career pathway chosen by such surgeons and have an advantageous impact on recruitment, retention, and CTICU staffing within the medical marketplace. Thus, these governing organizations can remain true to their mission of promoting professionalism, scientific knowledge, and integrity, while safeguarding professional identity and the interests of its constituent members.

Conflict of Interest Statement

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