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TACTICAL COMBAT CASUALTY CARE: TRANSITIONING BATTLEFIELD LESSONS LEARNED TO OTHER AUSTERE ENVIRONMENTS

Translating Tactical Combat Casualty Care Lessons Learned to the High-Threat Civilian Setting: Tactical Emergency Casualty Care and the Hartford Consensus

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Combat operations necessitate bold thought and afford the opportunity to rapidly evolve and improve trauma care. The development and maturation of Tactical Combat Casualty Care (TCCC) is an important example of a critical process improvement strategy that reduced mortality in high-threat combat-related trauma. The Committee for Tactical Emergency Casualty Care (C-TECC) adapted the lessons of TCCC to the civilian high-threat environment and provided important all-hazards response principles for austere, dynamic, and resource-limited environments. The Hartford Consensus mobilized the resources of the American College of Surgeons to drive public policy regarding a more singular focus: hemorrhage control. The combined efforts of C-TECC and Hartford Consensus have helped redefine the practice of trauma care in high-threat scenarios across the United States.

Keywords: TECC, TCCC, Tactical Emergency Casualty Care, Tactical Combat Casualty Care, Hartford Consensus, wilderness medicine, austere medicine

Introduction

The symbiotic relationship between the military and civilian trauma systems in the United States is responsible for some of the most rapid and consequential advances in the care of critically injured patients. In particular, the translation and evolution of the Tactical Combat Casualty Care (TCCC) guidelines through the Committee for Tactical Emergency Casualty Care (C-TECC) and subsequently the Hartford Consensus (HC) have fundamentally reshaped high-threat trauma response in the United States.

History

Details surrounding the origin, development, and maturation of the TCCC guidelines are provided elsewhere.[1–3] Between 2001 and 2015, the Committee on Tactical Combat Casualty Care (CoTCCC) helped to drive innovation in combat trauma care and was partially responsible for some of the lowest case fatality rates in recorded military history.[4–6] Many frontline observations related to resuscitation and surgical intervention were validated at civilian academic centers and quickly applied back on the battlefield in Iraq and Afghanistan.[7,8] However, the power of TCCC lay in the systematic application of threat-based interventions to reduce potentially preventable mortality in the prehospital environment. Initial efforts (ie, in 2003–2009) to apply the prehospital combat lessons learned to the civilian sector were ad hoc and primarily focused on special weapons and tactics teams. The National Association of Emergency Medical Technicians (NAEMT) and Prehospital Trauma Life Support led initial efforts to formally bring TCCC lessons to the civilian sector. Broad implementation was hindered by local concerns about en bloc application of military protocols to the civilian sector. However, the disturbing increase in active shooter incidents in the United States during this period fueled efforts to speed the appropriate translation of combat lessons learned.

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In 2009, efforts to translate TCCC into the civilian sector accelerated. Nationally, a critical mass was reached; public and private sector entities (eg, NAEMT, the National Tactical Officer Association) that had been creating similar but distinct training, education, and doctrine recognized an unstated requirement to unify efforts, create common language, and codify response principles for high-threat casualty care. The resulting efforts led to the creation of the C-TECC and the HC.

The Committee for Tactical Emergency Casualty Care

The C-TECC convened in 2010 to coordinate national ad hoc efforts to translate TCCC into civilian practice. The C-TECC is a best-practice development group for the provision of trauma care in high-threat, prehospital environments. Modeled after the CoTCCC, the C-TECC comprises a broad range of interagency operational and academic leaders in the practice of high-threat medicine.[9] The original Tactical Emergency Casualty Care (TECC) guidelines published in 2011 represented the first broadly accepted set of civilian all-hazards, high-threat trauma care guidelines.[9] The guidelines were based largely off of the most recent TCCC guidelines with linguistic changes to reflect the civilian operational environment (eg, removal of phrases such as "the best medicine on the battlefield is fire superiority") and minor modifications in recommended procedures. The guidelines provided clear recommendations for integration of operational requirements into trauma care and articulated the importance of threat mitigation, hemorrhage control, and rapid evacuation of casualties. In TECC, care recommendations are modeled after the TCCC phases of care and described in the 3 fluid, threat-based phases of Direct Threat Care, Indirect Threat Care, and Evacuation Care.

The TECC guidelines have evolved over the past 5 years to reflect the unique constraints and characteristics of civilian high-threat response, including care for pediatric patients, lack of body armor, legal requirements, engagement of civilian leadership, education of the public, creation of integrated response models, and even the adaptation of TECC for the operational K9.[10,11] Critically, the TECC guidelines also reflect that, in the civilian setting, most high-threat missions are inherently rescue missions. Accordingly, the guidelines have always emphasized the importance of casualty access and extraction/evacuation. The TECC guidelines incorporate best-practice and evidence-based guidelines to form a practical set of trauma care principles.[12,13] In addition, C-TECC has focused on driving research to discern the distinctions in etiologies of mortality in combat versus civilian high-threat incidents.[14]

Domestic first responder agencies quickly implemented TECC training programs and, particularly within the law enforcement community, a paradigm shift emerged. Law enforcement tactics, techniques, and procedures in response to active shooter incidents began to reflect the twofold response paradigm of "Stop the killing; stop the dying." TECC became the critical link between the 2 operational requirements with multiple case reports of law enforcement interventions, in particular tourniquets, saving lives.[15,16] At the national level, a variety of governmental and professional organizations endorsed TECC or incorporated the guidelines into their recommended trauma response to high-threat civilian prehospital trauma care.[17–20] As a result of this extensive local, regional, and national support, over 150 000 law enforcement officers, paramedics, firefighters, and physicians have been trained in TECC since 2011 (C-TECC Board of Directors, unpublished data, April 2016). The importance of this full-spectrum integration is illustrated in the TECC Chain of Survival concept (Figure 1). In 2016, at the joint Special Operations Medical Association—Department of Homeland Security Office of Health Affairs Tactical EMS (TEMS) Summit, participants from over 20 national organizations voted to include TECC as the sole trauma care domain for the National TEMS Initiative and Council Core Competency Framework.[21]

Hartford Consensus

In 2013, motivated by the devastating 2012 Sandy Hook elementary school massacre, a group of national subject matter experts convened to develop strategies to increase survivability in mass casualty shootings. Several of these leaders were longtime CoTCCC members and were intimately involved in the formation of C-TECC 2 years earlier. The meeting resulted in the publication of a concept document, entitled the Hartford Consensus (HC), that laid out a strategic framework for engaging the American College of Surgeons Committee on Trauma and leveraging their significant educational, public relations, and policy resources to effect change on a national level.

The initial HC paper echoed the original TECC guidelines, emphasized hemorrhage control, restated the importance of integrated first responder operations, and was most notable for the creation of the useful briefing and training mnemonic THREAT[22,23]:

- Threat suppression
- Hemorrhage control