

Tactical Combat Casualty Care (TCCC) Update

Harold R. Montgomery, ATP; Brendon G. Drew, DO

The Committee on Tactical Combat Casualty Care (CoTCCC) drives on with its mission despite COVID-19 quarantines, meeting cancellations, and changes in organizational structure.

Committee Charter

The CoTCCC has been chartered as a DoD committee since 2002 and had several parent organizations from US Special Operations Command (USSOCOM) to the Naval Operational Medicine Institute (NOMI)¹ to the Army Institute of Surgical Research (USAISR) to the Defense Health Board (DHB).² With the move of the Joint Trauma System (JTS) to the Defense Health Agency (DHA) in 2018, the most recent re-charter was the most robust and redefining in the history of CoTCCC.

The CoTCCC is now a component committee within the newly chartered Defense Committee on Trauma (DCoT) which is a branch of the JTS under DHA. The CoTCCC is also aligned with the now formally established peers of the Committee on En Route Combat Casualty Care (CoERCCC) and the Committee on Surgical Combat Casualty Care (CoSCCC). The CoTCCC mission remains consistent but is now aligned with the CoERCCC and CoSCCC to implement a streamlined set of guidelines that span the continuum of care. As such, the JTS clinical practice guidelines will be synchronized from point of injury through evacuation to a fixed medical facility.

Fundamentally, the purpose of the DCoT and component committees are to produce and document the guidelines that will define tactical and operational standards of care for combat casualties. Additionally, the charter stipulates options in which the DCoT can establish working groups to address specific issues and problem sets such as prolonged casualty care.

As the JTS has been designated as the DoD reference body for trauma,³ the DCoT and its component committee membership will be the core of that reference body. Made up of specially selected subject matter experts, the DCoT is poised to provide the service medical departments with sound guidance fused from evidence-based medicine, trauma registry data, best practices, lessons learned, and expert opinion.

Curriculum Development

In accordance with the mandates of DODI 1322.24, Medical Readiness Training (MRT) dated 16 MAR 2018,⁴ the updating and standardization TCCC curriculum are well under way.

In 2018, the Assistant Secretary of Defense for Health Affairs established working groups focused on oversight and development of a tiered set of curricula to integrate TCCC training at all levels of the DoD. These working groups with representation of CoTCCC members and service representatives have been critical in establishing common learning objectives and metrics that drives the curriculum development.

The curricula development is a comprehensive collaboration of subject-matter experts and education professionals from the CoTCCC, the JTS Joint Trauma Education & Training Branch (JTETB), the University of Miami, the University of Central Florida, Army Futures Command, the Defense Medical Modeling & Simulation Office (DMMSO), and the Defense Medical Readiness Training Institute (DMRTI)

TCCC for All Service Members (TCCC-ASM) was released in August of 2019 and is being integrated into the initial entry training of the services as well as at unit level. TCCC for Combat Lifesavers (TCCC-CLS) will be released no later than June of 2020 and will standardize content of existing combat lifesaver and first responder programs across the services. Upon the release of TCCC-CLS, we will officially shelve the preceding TCCC for All Combatants (TCCC-AC) to the archives of TCCC success stories.

TCCC for Combat Medics and Corpsman (TCCC-CMC) is targeted for release later in the year which will provide curricula content replacing the existing TCCC for Medical Personnel (TCCC-MP). The TCCC-CMC curricula modules will expansively cover the TCCC training requirements of junior medics and corpsman in a modularized package. The intent of the modularized content is to optimize delivery in multiple methods that the services, organizations, and individuals can employ. The modules can be integrated into larger curricula courses such as initial entry medical training such as MOS, NEC, and AFSC producing courses. The modules may be consolidated into a stand-alone TCCC-CMC course akin to how TCCC-MP was previously conducted. The modules may also be time-spaced to serve as sustainment training at unit level like the traditional “sergeant’s time.” Finally, the modules are intended to be anytime access for individuals to conduct self-paced knowledge and skills maintenance.

TCCC for Paramedics and Providers (TCCC-CPP) is targeted for both enlisted medical personnel trained to the paramedic level and for physicians, physician assistants, and other health care professionals operating at the Role 1 level of care. While

TCCC-CPP covers several advanced procedures and skills, it is also focused on knowledge and science behind the principles of the TCCC Guidelines. This focus is to ensure that medical officers and providers that supervise tactical medics have a clear understanding of their capability and employment strategies, especially in skills specific to TCCC. Additionally, TCCC-CPP will provide training in the establishment of unit-based casualty response systems and their integration into combat trauma systems in a theater of operations.

Finally, the revised curricula will entail a robust train-the-trainer program for each level of TCCC training. The train-the-trainer program will be a three-phased hybrid of prerequisite training, online trainer course, and a proctored evaluation of conducting TCCC training. Phase one is prerequisite training which will be recognized service-based instructor courses or the DoD-wide train-the-trainer course on Joint Knowledge Online (JKO) or previously recognized instructor certification such that offered by the National Association of EMTs (NAEMT). The second phase will be completion of the formal online TCCC train-the-trainer course structured for each level of TCCC training which will be available on the Deployed Medicine website and mobile application. Upon completion of the second phase, a trainer will be eligible for a proctored evaluation while providing TCCC training. Upon completion of this third phase, the trainer can then conduct future TCCC training independently.

TCCC Pending and Emerging Change Proposals

Hypothermia prevention has been a key component of the TCCC Guidelines since the original publication in 1996.⁵ There has not been an update to the TCCC hypothermia prevention and management guidelines in 14+ years. The time since has seen the development of several commercial hypothermia prevention enclosure systems as well as increased requirements for IV fluid warming especially with the TCCC endorsement of packaged blood products. This proposed change was presented by Brad Bennett, PhD, at the CoTCCC meeting of 10-11 SEP 2019 and further discussed on a CoTCCC teleconference held on 11 FEB 2020.

Tranexamic acid (TXA) was integrated into the TCCC Guidelines in 2011⁶ and has since been reasonably well employed units and administered to many combat casualties. The ongoing

TXA review and change proposal is evaluating several aspects including the dosing of TXA (amount and timing), routes of administration (intramuscular and intraosseous), speed of administration (slow IV push vs 10 minute infusion), and the applicability and dosing of TXA as related to potential traumatic brain injury.

Analgesia in TCCC was last addressed upon the introduction of the triple option analgesia plan that integrated ketamine into the TCCC guidelines in 2014.⁷ Several recently published articles have highlighted the poor adherence to the TCCC analgesia guidelines. This review and potential change proposal will re-evaluate ketamine dosing for analgesia and consider sedation in TCCC. Also, new medications and new routes of administration for known medications are being evaluated for guideline inclusion.

Abdominal trauma and eviscerations is a new topic being drafted for consideration in TCCC. Changes that have been initiated include a relook at airway management, and a reevaluation of the use and timing of antibiotics in TCCC.

Harold Montgomery, ATP
Vice Chair, CoTCCC
Joint Program Manager, TCCC

Brendon Drew, DO
Chairman, Committee on TCCC

References

1. Giebner SD. The transition to the Committee on Tactical Combat Casualty Care. *Wildern Environ Med J*. 2017;28:S18-S24.
2. Butler FK. Tactical Combat Casualty Care turns 20. *Mil Med*. 2017;182:e1563-e1568.
3. National Defense Authorization Act for Fiscal Year 2017.
4. Department of Defense Instruction 1322.24: Medical Readiness Training. 16 Mar 2018.
5. Butler FK, Hagmann J, Butler EG. Tactical Combat Casualty Care in Special Operations. *Mil Med*. 1996;161(suppl):1-16.
6. Dickey NW, Jenkins D. Defense Health Board recommendation for the addition of tranexamic acid to the Tactical Combat Casualty Care guidelines. Defense Health Board Memo dated September 23, 2011.
7. Butler FK, Kotwal RS, Buckenmaier CC II, et al. A triple-option analgesia plan for Tactical Combat Casualty Care: TCCC Guidelines change 13-04. *J Spec Oper Med*. 2014;14(1):13-25.