

Changes Coming to TCCC Training

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Data from the Joint Trauma System (JTS) demonstrate that if a combat casualty lives long enough to reach the care of a surgeon, the odds overwhelmingly favor that the casualty will survive, which highlights the importance of the care rendered by first responders.

In June 2018, the Assistant Secretary of Defense for Health Affairs chartered a working group made up of members from the Defense Health Agency (DHA) and the services charged with developing a standardized **Tactical Combat Casualty Care (TCCC)** curriculum for all service members (ASM). TCCC ASM will be the first of four Joint-Tiered standardized TCCC curricula to be completed. The TCCC ASM working group identified five lifesaving skills (rapid casualty assessment, tourniquet application, hemostatic dressing, pressure dressing, and airway maneuvers) that will serve as both the minimum standard of care for all service members and the foundation by which additional Joint-Tiered standardized longitudinal curricula will be developed. The goal of TCCC ASM is to increase trauma readiness for an estimated 1.5 million non-medical first responders across the full range of military operations (air, land, and sea). Tier one - **TCCC ASM** is scheduled to be delivered to the armed forces on 31 July 2019. The remaining tiers being developed are Tier two - **Combat Lifesaver**, Tier three - **Combat Medic/Hospital Corpsman**, and Tier four - **Combat Paramedic/Provider**. All standardized TCCC training curricula are scheduled to be delivered to the services no later than April 2020, with the expectation that the services be prepared to start training from that point forward. Once these courses are integrated into the services, the JTS and the services will have established the minimum trauma training standards as a baseline for Joint interoperability.

Background

TCCC originated as part of the Naval Special Warfare Biomedical Research Program. A review of battlefield trauma care revealed that:

- 1) Extremity hemorrhage was a leading mechanism of preventable death in combat fatalities;
- 2) Deaths from extremity hemorrhage could be prevented with the application of a tourniquet; and
- 3) The routine use of tourniquets during orthopedic surgery procedures provided evidence that these devices could be safely used for short periods of time.

Despite these facts, in the early 1990s, combat medical personnel were trained NOT to use tourniquets on the battlefield because of the mistaken belief that they would cause ischemic damage to arms and legs.



**Soldiers assigned to the 40th Combat Aviation Brigade treat a simulated patient during a tactical combat casualty care course that was conducted at Camp Buehring, Kuwait, on 23 February 2016.
(Photo by SSG Ian M. Kummer)**

After a comprehensive review of tourniquet use identified that prevailing prehospital trauma care doctrine was wrong, it became apparent that a thorough review of battlefield trauma care principles was necessary. Do casualties with penetrating trauma really require spinal immobilization? Are two liters of saline solution administered rapidly really the best strategy for treating casualties with internal bleeding and shock? Are there no better ways to treat the pain of combat wounds than slow-acting intramuscular morphine?

A three-year research effort undertaken by the Special Operations medical community in partnership with the Uniformed Services University resulted in the development of TCCC guidelines — a set of novel, evidence-based, best-practice prehospital trauma care guidelines customized for use on the battlefield.

The TCCC development effort identified the leading causes of preventable death on the battlefield. Originally published in 1996, the principles of TCCC have been continuously revised and updated over the last two decades as additional evidence and experience has been gained. Changes to these guidelines have been based on new technology, emerging research, and lessons learned from the battlefield, as evaluated and recommended by the Committee of Tactical Combat Casualty Care (CoTCCC).

The mission of the CoTCCC is to develop evidence-based, best-practice prehospital trauma care guidelines customized for the tactical environment and to translate change proposals into relevant trauma care best practices in support of the full range of military operations. Change proposals result from detailed and critical analysis of available evidence through medical literature, scientific studies, military trauma registry casualty reviews, and best practices. Changes are then presented to the CoTCCC for deliberation, refinement, and consensus through a majority vote. Currently, the CoTCCC is composed of 42 voting members specially selected as subject matter experts in trauma care, battlefield medicine, tactical medicine, and prehospital medicine with extensive experience in the deployed and combat environment. The CoTCCC focuses on providing the best recommendations for training and equipping the joint warfighter going into harm's way around the world. CoTCCC falls under the Defense Committee on Trauma, one of seven branches of the JTS.

On 18 January 2013, Marine Gen James N. Mattis, then commander of the United States Central Command (CENTCOM), wrote a memorandum to U.S. Military Service Chiefs focusing on the CENTCOM killed in action reduction initiative. He highlighted the outcomes of a November 2012 survey of prehospital medical teams conducted by

his command surgeon in coordination with the JTS. This survey's findings identified the difference between the Ranger battlefield trauma care experience and that of the Department of Defense (DoD) at large. The difference was attributable to the Ranger Casualty Response System, a command-directed program that aggressively teaches TCCC guidelines to all unit personnel, integrates TCCC into small unit tactics and battle drills, and utilizes a unit-based trauma registry for performance improvement and directed procurement. In contrast, most of the DoD did not adopt TCCC until a decade or so after the 75th Ranger Regiment, and other Special Operations units did not implement it with an equivalent amount of command emphasis, contributing to a greater incidence of preventable prehospital deaths in military units that were late adopters of TCCC. Gen Mattis' memorandum outlined that the unprecedented low fatality rate achieved by the Ranger Casualty Response System may serve as a model for improving prehospital trauma care and saving lives on the battlefield.¹

Standardized TCCC Training

Unfortunately, many trauma courses in the past that have been represented as "TCCC" training were not actually certified courses. As noted in a 2015 JTS white paper on this topic, "A TCCC curriculum was first established in 2008 at the request of Navy Medicine. Annually updated versions of this curriculum are now developed by the JTS and posted on the MHS [Military Health System] and NAEMT [National Association of Emergency Medical Technicians] websites. Although [CENTCOM] and the services have directed that U.S. service members deploying in support of combat operations be trained in TCCC, there has been no standardization of the courses used to accomplish this training. Pockets of excellence exist throughout DoD with TCCC implementation, but significant variation has been noted in TCCC training courses (especially with sustainment training). Further, some medical providers in the DoD have not been trained in TCCC at all. The JTS combat trauma care performance review process, recent medical AARs [after action reviews] from combat units and the recent media note of inappropriate and potentially dangerous combat trauma training at some military units have all served to highlight the need for better quality assurance of both initial and sustainment DoD TCCC training courses."²

In an effort to eliminate preventable death on the battlefield, DoD policy and congressional mandate directed units to implement standardized TCCC into their readiness training. Sections 707 and 708 of the National Defense Authorization Act for Fiscal Year 2017 outline how the JTS' Joint Trauma Education and Training Branch (JTET) will help improve trauma readiness and outcomes through evidence-driven performance improvement and incorporation of the identified opportunities to improve battlefield trauma care into annually updated TCCC training curricula. The JTET reached initial operating capability in March 2019. The JTET will serve as the reference body for coordination



A 10th Mountain Division Soldier checks a simulated casualty's airway during the field care phase of a Tactical Combat Casualty Care demonstration at Forward Operating Base Fenty, Nangarhar Province, Afghanistan, on 22 October 2013. (Photo by SGT Margaret Taylor)

of trauma training partnerships with civilian medical centers, sharing partnership lessons learned, developing standardized combat casualty care instruction for all members of the armed forces, and promoting the use of standardized trauma training platforms. The director of the DHA, in coordination with the services and the Joint Staff, determined that the JTET will fall under the JTS umbrella and will be responsible for optimizing and standardizing combat trauma training within DoD. The JTET's first priority is to fulfill the requirements outlined in DoD Instruction 1322.24, *Medical Readiness Training*, as well as to identify Joint trauma courses needed to provide injured service members with the best possible chance of survival and recovery. The JTET's primary functions will be to facilitate military and civilian educational partnership agreements and develop standardized outcomes-based instruction for trauma training to deliver to the services.

The Deployed Medicine (DM) website and smart phone application is a trial platform used by the DHA to test new innovative learning models aimed at improving readiness and performance of deployed military personnel. The intent is to deliver personalized, dynamic learning using the most current and accessible technology, enabling a self-directed and continuous study of medical best practices and lessons learned. DM is accessible via the website at www.deployedmedicine.com or by downloading the free app on your Apple or Android device. For more information, please send an email to info@deployedmedicine.com or visit the JTS website at <https://jts.amedd.army.mil/>.

Notes

¹ Gen James N. Mattis, Memorandum: Killed in Action (KIA) Reduction Initiative, 18 January 2013.

² Joint Trauma System White Paper, "Establishing a DoD Standard for Tactical Combat Casualty Care (TCCC) Training, 10 September 2015.

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