

# TRADOC ADAPTS MEDICAL TRAINING



*Servicemembers taking the combat lifesaver course in Balad, Iraq, evacuate a casualty in the mass casualty evacuation drill that is done at the end of every training iteration.*

U.S. Army/SPC Lisa A. Pope

# TO MATCH COMBAT REALITIES



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U.S. Army/SPC Lisa A. Pope

By Scott R. Gourley

**A**s noted by LTG Mark Hertling, deputy commanding general, Initial Military Training, U.S. Army Training and Doctrine Command, in the March issue of *ARMY*, the medical community is revising the Army's tactical combat casualty care (TC3) training based on extensive combat experience, adapting many of the most critical tasks involving hemorrhage and traumatic battlefield injuries.

"TC3 is a field that originated in a lot of units—particularly the Rangers and Special Forces, but also in conventional line units—where the medics and surgeons, going back as far as the conflict in Somalia, were noting 'lessons learned' in the way that we first responded to casualties, prior to when they reached a fixed medical facility," explained TRADOC surgeon COL Karen O'Brien, Medical Corps. "If you think about the way you respond to trauma on the battlefield compared to the way you would do it beside an American highway, it's quite different. There are tactical considerations that don't

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Above, 1LT Eliza Wick, battalion personnel officer for Headquarters and Headquarters Company, 82nd Brigade Support Battalion, 3rd Brigade Combat Team, 82nd Airborne Division, puts a tourniquet on the leg of PVT Matthew Wright during practical combat exercises at the tactical combat casualty care (TC3) class at Contingency Operating Base Speicher, Iraq. Left, students in the combat lifesaver course taught at the Tricia L. Jameson combat medic center, Balad, Iraq, run into action during the mass casualty evacuation drill in September.

*Soldiers at Fort Sill, Okla., take IV (intravenous) training. Since the introduction of combat lifesaver training two years ago, soldiers' medical training has aligned more closely with tactical combat casualty care.*



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come into play in civilian medicine: things like maintaining security when you are being attacked, in addition to being able to care for the casualty; things like teaching soldiers that just because they are wounded doesn't mean that they shouldn't keep shooting back and making sure they are neutralizing the enemy if they are able to. As a result, a lot of those tactical considerations started being taught to medical folks and to junior leaders in the small units that would be helping respond to casualties."

**N**oting that early activities also included reviewing data from previous wars, she said, "What they found was that often after a war there would be some lessons learned that might be forgotten. An example of one of those was tourniquets. If you think about it, we have been using cravat and belt-type tourniquets ever since the Revolutionary War. Yet there was data from earlier wars that showed that tourniquets of that nature didn't work very well. On top of that, there was a lot of concern about using tourniquets because people thought that if you cut off circulation to an extremity for too long, you would lose that extremity. Based on the data collected in prior conflicts, however, we were able to start putting together the facts, which showed that tourniquets that work actually save lives. So a lot of development occurred in the

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early 2000s to identify a good, functional tourniquet that could be issued to every soldier and put into the new improved first-aid kits.

"We think that doing that can now be credited with more than 1,000 lives saved," COL O'Brien added. "Additional research has also shown that there have been no bad outcomes on the basis of using tourniquets. We also know that there is still some hesitation in first responders to apply a tourniquet. So they often wait longer than they should, and sometimes people die because they don't have a tourniquet put on in time. As a result, we still have some potential survivors who die. The time to intervene to prevent these deaths is in the first 5 to 10 minutes."

That analysis of battlefield lessons had also prompted a significant revision of medical aspects of basic combat training, with the introduction of combat lifesaver training in May 2007. Among the memorable changes for many new soldiers at that time was the new requirement to successfully install an IV [intravenous] needle with

saline bag lock.

"As we started to teach all soldiers combat lifesaver training, we started to modify that combat lifesaver curriculum to align it with principles of tactical combat casualty care," COL O'Brien said.

Casualty analysis remains a dynamic process, however. COL O'Brien added, "One of the things they learned as they continued to look at potentially survivable deaths and the causes behind them: Some of those causes were 'tourniquetable' injuries. Others involved compressible hemorrhage, which has led to the development of new special bandages that have material on them to prevent bleeding. And there was another area that evolved, non-compressible hemorrhage—hemorrhage to the torso, like internal bleeding in the lungs or abdominal area. You can't really put a tourniquet on that or compress that."

She continued, "What they found in those situations was that when you get a lot of IV fluid early on, it's actually bad for that type of trauma. First, it raises your blood pressure, which can blow off a clot that is forming inside the area that can't be reached, and all of that data coming from the Joint Theater Trauma Registry has shown that we want to keep a lower blood pressure in some of those patients. Second, all of that extra fluid can dilute your blood's ability to clot naturally."

The concern about the noncompressible trauma was compounded by the concern regarding remaining delays in installing tourniquets.



*SPC Chase Carman, a medic and TC3 instructor, shows soldiers how to load a casualty at the 82nd Airborne Division troop medical clinic on Contingency Operating Base Speicher.*

“Often first responders were focused on starting the IV, thinking that the IV was the lifesaving intervention,” COL O’Brien said. “In fact, there is really no data to show that getting an IV in the first 5 to 10 minutes is going to save anybody’s life. It’s not that IVs are bad in the long run. It’s that the priority of what should happen in the first few minutes should be geared toward stopping bleeding.”

Based on the analysis of all the data, the Committee on Tactical Combat Casualty Care had recommended that the Army stop inserting IVs during the “care under fire” phase of medical treatment—primarily the first few minutes after being wounded.

**A**s a result, GEN Martin E. Dempsey, TRADOC commanding general, made the decision to suspend IV training in basic combat training in September 2009. Following additional analysis, a new medical training support package was released in January 2010.

“We have changed the training to place more emphasis on mastery of bleeding control,” COL O’Brien said, adding that another area of emphasis in the new program involves familiarizing soldiers with the importance of being evaluated after exposure to blast effects. “If you’ve been in a vehicle exposed to a blast, within 50 meters of a blast, in a structure hit by a blast, or have any kind of direct blow to your head or loss of consciousness, you need to be evaluated by a medical professional, whether by a 68W [Army combat medic] or at an aid station,” she explained. “But you do need to be

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*SGT Patrick Malone, C Troop, 2nd Squadron, 14th Cavalry Regiment, 2nd Brigade Combat Team, 25th Infantry Division, demonstrates how to apply the combat application tourniquet during a bilateral exercise at Camp Bundela, India.*

evaluated, and possibly allowed to rest for 24 hours, because if you get that rest early on, it allows your ‘hard drive’ to reset. But if you don’t get that rest and you drive on, then you could have lingering problems for months.”

Another example of coordination across the Army medical and training communities during this same period is the release of the new Army field medical card, also known as the TC3 card, in individual first-aid kits.

*Soldiers from the 82nd Airborne Division practice loading a casualty into a paratrooper medical platform vehicle during practical combat exercises at the TC3 class at the medical clinic at Contingency Operating Base Speicher.*



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“The field medical card is the card identifying you when you are a casualty,” COL O’Brien said. “Under our old system, that card was initiated once you entered the medical system. So we really weren’t capturing a lot of data about what was actually happening at the level of the first responder, before someone entered the evacuation system: things like what time your tourniquet was applied or what other lifesaving measures were carried out by the first responder. We had a great joint theater trauma registry that was capturing care after someone was further along in the medical system, but we didn’t have that early-on data. The new card is aligned with TC3, allowing the data to be captured very early, and also to assist us in analyzing data and immediately responding to lessons learned as we continue to refine the field of TC3—as we work to whittle away the approximately 20 percent of combat fatalities that we believe to have been potentially survivable.”

The removal of the IVs from the combat lifesaver bags—fielded per AR350-1 at a level of one per squad—has also allowed the fielding and related training of new hypothermia-prevention/warming blankets.

**“W**hen you lose a lot of blood, even if it is 100 degrees outside, you get cold,” COL O’Brien said. “If you get cold, your blood stops clotting. You also have a higher likelihood of dying from other complications. So these new blankets will help keep people warm during the evacuation process, again bolstering their survivability.”

Other changes in the new medical training support package include training in tactical movement of casualties and expanded tactical scenario training.

Another recent adjustment in Initial Military Training involves hearing protection and starting to train soldiers to use the new combat arms earplugs.

“We are using an innovative approach developed by some of our audiologists, bringing the training out to the range, so that when soldiers have their first basic rifle marksmanship, they will also be issued the earplugs and train with them at that range,” COL O’Brien said. “Now they will be using them right after they train with them. We have also worked with our safety colleagues to incorporate hearing protection into the safety briefings at the ranges, tying those things together. Since hearing loss is the top reason for VA [Department of Veterans Affairs] claims from soldiers, we think this will have a huge benefit.”

In parallel with the new medical training efforts, the TRADOC surgeon is also involved with issues surrounding sleep deprivation. “I have been reviewing a lot of the material currently available, and we are looking at better ways to educate the force about the importance of sleep. We are looking at how to make our Army more resilient, and sleep is an important component of that,” COL O’Brien said. Acknowledging that the sleep-deprivation awareness and education campaign has to overcome a traditional service approach of digging deep and driving on, she added, “The old doctrine for sleep was that you should get a minimum of three hours a night. Last year we released a new field manual, FM 6-22.5 *Combat and Operational Stress Control Manual for Leaders and Soldiers*, which says that there is not a minimum number of hours, that we need to strive for 7 to 8 hours of sleep, and any time you fall below that for any significant number of days, your functions will start to be compromised.”

