Flight Paramedic Training

Commander’s Corner

RADM William M. Roberts
Commandant
Medical Education and Training Campus
JBSA-Ft. Sam Houston, TX
Deputy Chief,
Bureau of Medicine and Surgery (M7)
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Recruiting Highlights

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Sustainable Comprehensive Management
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By Jennifer Town

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RevMedx, Inc. developed XSTAT, the first self-expanding hemostatic dressing capable of stopping high-flow arterial bleeding from deep, narrow wounds within seconds and without direct pressure.
By John Steinbaugh

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Cover: 1st Sgt. David Falk, the senior noncommissioned officer and flight medic for Company C, 2nd Battalion, 227th Aviation Regiment, guides soldiers from the 154th Transportation Company, 180th Transportation Battalion, 15th Sustainment Brigade, 13th Sustainment Command (Expeditionary) away from a medical evacuation helicopter during medevac training at Fort Hood, TX. (Army)
As the heat of summer reaches its peak, so rises the training evolution of the combat medic preparing to mend those who, alongside their co-defenders of a nation, ensure that no casualty succumbs untended to the chaos of battle. From ground-based to aerial entry, these purveyors of mercy must assess, address, and redress the individual needs of their fellow fallen with the impartial objectivity that only they can bring to the fight.

The Q3 2013 issue of Combat & Casualty Care (C&CC) spotlights tactical combat casualty care with a look inside the similar but different worlds of general combat medic- and flight paramedic training. From the Department of Combat Medic Training (DCMT) at Joint Base San Antonio (JBSA)-Fort Sam Houston, responsible for training the Army’s 68-Whiskey healthcare specialists to flight paramedic certification and skills training at JBSA and Fort Rucker, AL, today’s combat medics and paramedics are trained to bridge the gap in transitional tactical combat casualty care (TCCC).

In an exclusive interview with RADM William M. Roberts, Commandant of the Medical Education and Training Center (METC), Joint Base San Antonio-Fort Sam Houston, TX, readers gain insight into METC efforts to ensure that enlisted medical trainees get the answers they need to pursue careers both during and beyond military service.

From techniques for the battlefield to sustainable, managed care that provides recovering combat-wounded veterans treatment reaching well past initial condition assessment, Naval Medical Center San Diego (NAVMED)—one of three DoD facilities for amputee care and rehabilitation—is addressing the complexities that accompany successful short- and long-term combat casualty care.

As much as combat affects the body, so it also affects the mind, sometimes severely and long after trauma. In a perspective on post-traumatic stress disorder, or PTSD, this issue of C&CC takes readers behind the doors of Haven Behavioral War Heroes Hospital, a facility dedicated to holistic care solutions such as cognitive Process- and exposure therapy forms that treat the root causes of a very real physical and psychological condition.

Finally, in this issue’s Industry Spotlight, RevMedx, provider of products for combat medics and civilian first responders, brings us a look at a first-of-its-kind self-expanding hemostatic dressing that may be the difference between hemorrhage stabilization and bleed out in non-compressible wounds.

Enjoy and as always, feel free to contact me with questions or comments!

Sincerely,

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Joint Base San Antonio’s Medical Education and Training Campus Department of Combat Medic Training prepares medics for battlefield tactical combat casualty care.

By Lori Newman, METC Public Affairs

The Department of Combat Medic Training (DCMT) at Joint Base San Antonio-Fort Sam Houston is responsible for training the Army’s 68-Whiskey healthcare specialists, more commonly referred to as combat medics. DCMT is an Army-specific training program that is offered at the Medical Education and Training Campus (METC) and one of more than 52 enlisted medical programs that fall under METC. The curriculum is driven based on Army requirements.

Size Matters

Second in numbers only to the infantry, there are approximately 39,000 active duty-, Reserve-, and National Guard combat medics in the Army today. About 6,800 soldiers will cycle through the DCMT this year.

“Combat medics after graduating from this course will do everything from running morning sick call to treating the most severe battlefield injuries,” said Lt. Col. Rob Hennessy, director of DCMT. “Our course provides medics the necessary skills required to save a life on the battlefield and assist a medical officer in caring for soldiers within a unit.”

Once the soldier medics complete the course, many of them will be assigned to an infantry unit, which may already be deployed. “If a casualty can make it alive from the battlefield to a combat support hospital, they have a 98 percent chance of survival,” said Donald Parsons, deputy director of DCMT. “Combat medics play a key role in battlefield injury survival.”

“Saving people’s lives … you can’t beat that,” said Pfc. Andrew Hardaway, who is currently training to become a combat medic.

Fellow student Pvt. Jessica Elder agreed. “I choose to be a medic because I think the best job is saving people’s lives. The Army always needs medics.” Elder said she would like to become a physician assistant, and this course will help her progress in her career.

EMT Evolution

During the first seven weeks of the course, soldiers learn to become emergency medical technicians. This is the same training a civilian would go through to become an EMT. Before the students can move onto the next phase of the course, they must pass the National Registry EMT exam.

“Our pass rates [for the National Registry exam] are pretty phenomenal,” Hennessy said. About 85 percent pass the initial exam, the lieutenant colonel explained. The students get three attempts; after that the pass rate goes up to around 97 percent.

“The national average pass rate for civilians from 17 to 21 years old, which is the bulk of our students, is 64 percent,” he added.
Training through Simulation
The second part of the course concentrates on tactical combat casualty care. During this phase, students receive a checklist of all the different skills they need to master. “It gives them the step-by-step instructions of how to treat the patient,” Parsons said. “The sheet tells them how to treat the injury, and it gives them a timeframe to complete the treatment.”

The students practice their skills on human patient simulators. These simulators cost about $50,000 each and can move their eyes, legs, talk, breathe, and even bleed. “The simulators replicate real battlefield injuries that the students wouldn’t be exposed to otherwise. We can’t get them all into a trauma room at Brooke Army Medical Center,” Hennessy said.

With the help of SeaWorld set designers, the DCMT recently revamped the two training areas set up to emulate the environments soldiers may encounter when they deploy. One of the areas resembles an Afghan village, and the other is similar to the mountainous terrain in Afghanistan.

“It’s more realistic,” said instructor Sgt. 1st Class Chimere Richardson. “It puts them in the frame of mind of what they are going to see on the battlefield. They come in here and actually get hands-on experience.”

In dark, smoky rooms filled with loud music and strobe lights, students work on human patient simulators, which, according to Staff Sgt. Alex Jenssen, are automated to give students the sense of working on real people. Intermittent gunfire rings through the students’ ears.

Students must learn to complete a combat casualty assessment, apply a tourniquet, initiate a direct IV, and dress the most severe battlefield wounds. They also learn complex medical procedures such as emergency cricothyroidotomy—cutting an airway into the patient’s throat—as well as needle chest decompression for a collapsed lung.

After soldier medics practice the skill sets multiple times, they are tested on each one. Testing is conducted on a one-to-one basis, one instructor per student.

Putting Skills to the Field
For the final two weeks of the course, the students go to a mock forward operating base called Courage at JBSA-Camp Bullis. “That’s where they put everything together,” Hennessy said. “They participate in mass casualty exercises to learn how to work as a team.”

To graduate, the students must pass a graded trauma lane at JBSA-Camp Bullis. Each student must be able to assess and treat a severely wounded simulated casualty within a specified amount of time and do it correctly, Hennessy explained. The students have three tries and if they don’t pass, they can take the course one more time. The course currently has an 88 percent pass rate.

“It’s easy to teach someone a skill, but it’s harder to teach them to think,” Hennessy said. “They need to learn not only how to [perform procedures] but when they need to be done.”

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Joint Base San Antonio’s Medical Education and Training Center (METC) works to enhance opportunities for enlisted medical professionals during and after their military careers.

RADM William M. Roberts currently serves as the commandant, Medical Education and Training Campus, San Antonio, TX, and as the deputy chief, Bureau of Medicine and Surgery (BUMED), Education and Training (M7).

A native of Washington, D.C., RADM Roberts was raised in Europe while his father served as a diplomat in the U.S. Foreign Service. He graduated as class valedictorian from the Landon School in Bethesda, MD, and earned his bachelor of arts (cum laude) from Princeton University in 1975. He completed his doctor of medicine in 1979 at the George Washington University, where he was class president for both his junior and senior years. His four years of medical school were under the auspices of the Armed Forces Health Professions Scholarship Program.

RADM Roberts was commissioned a lieutenant in the Navy Medical Corps in May 1979 and completed his surgical internship at the Naval Regional Medical Center, San Diego. Subsequent tours included service as a senior medical officer aboard USS New Orleans (LPH 11) and USS Durham (LKA 114) followed by an assignment to Naval Medical Clinic, San Diego, where he served as the senior medical officer at Naval Station and as clinic director at both the Naval Training Center and the Marine Corps Recruit Depot.

After deployment, he matriculated into the University of Chicago Emergency Medicine residency, serving as chief resident during his last year of training. Upon completion of residency in 1988, Roberts was assigned as staff and faculty emergency physician at Naval Medical Center San Diego. In 1991, he received orders to U.S. Naval Hospital, Guam, as chief of the medical staff and director of medical services.

He returned to Naval Medical Center San Diego in October 1993 as assistant chairman, Emergency Medicine Ambulatory Care Department, and became chairman one year later. In March 1995, the Navy Surgeon General selected him as specialty leader for Emergency Medicine and, in August 1995, he received additional orders as commanding officer, Medical Treatment Facility, USNS Mercy (T-AH 19). He subsequently served as deputy commander, Naval Medical Center San Diego, from August 1998 until November 2001, with additional duty as assistant chief of staff for medical reporting to Commander, Navy Region Southwest.

From November 2001 until May 2003, he was assigned as force surgeon for Commander, Naval Surface Force U.S. Pacific Fleet, in Coronado, CA, and then as commanding officer, Naval Hospital Bremerton, WA, from June 2003 until May 2006. Following a one-year tour as deputy director, Medical Resources, Plans and Policy Division (OPNAV N931), his first flag assignment was as medical officer of the Marine Corps from July 2007 to September 2008. He was then assigned as director, OPNAV N931, at the Pentagon, as well as chief of the Navy Medical Corps. His most recent assignment was at the United States Fleet Forces Command in Norfolk, VA, as the fleet surgeon.

RADM Roberts’ awards include the Legion of Merit (five awards), Meritorious Service Medal (two awards), Navy and Marine Corps Commendation Medal (two awards), and the Navy and Marine Corps Achievement Medal.

In 2008, he was named a “Hero of Emergency Medicine” on the occasion of the 40th anniversary of The American College of Emergency Physicians (ACEP), and in 2008 he was selected for the “Excellence in Emergency Medicine” Award by the military chapter of ACEP.

RADM Roberts was interviewed by TDM Editor Kevin Hunter.
C&CC: Please talk about your role as Commandant of METC and Deputy Chief, Education and Training (M7) for BUMED.

**RADM Roberts:** When I first arrived at the Medical Education and Training Campus (METC) in San Antonio, TX, as only the second commandant, I was stunned by the sheer scope of the campus and the dedication and professionalism of the 1,500 high-performing men and women on the multidisciplinary team. As the world’s largest enlisted medical school and the largest consolidation of military training in the DoD, METC graduates roughly 20,000 Army, Navy, Air Force, and Coast Guard students annually from one of the more than 50 entry-level and advanced medical career programs. State-of-the-art learning technologies and online collaboration tools—such as e-books, Blackboard learning platforms, and mobile-learn applications and notebook computers in most of the classrooms—contribute to the future of military medical training technologies. METC must be, and is, that center of excellence for the preparation of our uniformed enlisted medical professionals.

As the U.S. Navy Bureau of Medicine and Surgery’s deputy chief for education and training (M7)—a new code established by the surgeon general only last August—I lead a highly experienced team that strives to develop innovative solutions in order to deploy effective, efficient, cohesive, and sustainable training and education policies across Navy Medicine. M7’s focus is ensuring that training and education lead to warfighter readiness and meet both clinical and operational requirements. The training and education mission must support peacetime-, wartime-, and humanitarian missions. M7 accomplishes this monumental task by developing policies and strategies that use best practices, continually seeking future technologies, and reviewing and validating current requirements to ensure the training and education stay relevant for today and tomorrow. Coordination with the wide-reaching execution arm of Navy Medicine’s education and training enterprise, our sister services, interagency, and civilian colleagues is key.

C&CC: Please talk about your office’s mission and role as part of the BUMED and greater DoD medical community.

**RADM Roberts:** Medical Education & Training (MET) focuses on the education and training of medical personnel within the Military Health System (MHS). The goal of the MET component within the DoD/MHS is to deliver medical education and training in the most effective and efficient way possible through the enhanced ability to: see, track, evaluate, and measure medical education and
training activities (e.g., time, money, performance, common MET record); complete unified review and management of requirements; standardize common content and tools; improve agility and responsiveness.

C&CC: Talk about some of the primary advances helping your office address the education needs of combat-ready medical personnel before they are deployed to care facilities nationally and worldwide.

RADM Roberts: We are making use of many advanced technologies that allow us to utilize 3-D imagery, gaming applications, and eventually virtual capabilities to advance our education and training environments. We utilize the 3-D capability to show surgical instruments or medical equipment prior to the student’s hands-on experience. We are able to use advanced gaming concepts to provide students with pre-test learning opportunities.

Simulation is another of the many tools METC uses to train its students. Simulation technology used at METC ranges from high-technology/high-fidelity mannequins to task trainers, as well as computer-based simulation software. How simulation is used, and to what level, is determined by the curriculum and learning objectives.

C&CC: How is your office addressing challenges regarding lessons learned and applications to ongoing training for today’s Joint combat-ready medical personnel?

RADM Roberts: An important element of curriculum development and course sustainment within METC is our capability to effectively respond to our services’ operational requirements. This is done through a “Rapid Implementation of Lessons Learned” process. This process incorporates the Inter-service Training Advisory Board (ITAB), which ensures the services are included in validating changes to curriculum that address the latest information gleaned from the field.

C&CC: From an enterprising perspective, how is your office working to promote partnering with industry in delivering more effective and efficient know-how to the Joint DoD medical community?

RADM Roberts: We work jointly with accrediting bodies to ensure our curriculum and our prerequisite student requirements are equal to or greater than those of our civilian counterparts. METC partners with numerous academic organizations and healthcare facilities to ensure our students are receiving the very best clinical experiences with advanced capabilities. Together with various civilian academic institutions, employers, and other federal agencies and legislative bodies, METC stays attuned to enhanced opportunities for servicemembers following their uniformed careers.

C&CC: Feel free to discuss any accomplishments or current/long-term objectives your office has achieved or is working toward.

METC must be, and is, that center of excellence for the preparation of our uniformed enlisted medical professionals.

RADM Roberts: METC continues to be involved in several initiatives to better prepare students for allied health, emergency medical service technician, and nursing careers while in the military and after leaving military service. One recent major accomplishment was the awarding of accreditation status by the Commission on the Council on Occupational Education (1).

Another example is our collaboration with state organizations such as the Texas Workforce Commission’s College Credit for Heroes initiative, the Texas Higher Education Coordinating Board, Texas Board of Nursing, and many Texas colleges and universities. On a national level, we're collaborating with agencies such as the Health Resources Service Administration, the National Council of State Boards of Nursing, the Veterans Administration, the American Association of Colleges of Nursing, state legislatures and task forces, the National League for Nursing Accreditation Commission, the Department of Transportation National Highway Traffic Safety Administration, and, of course, the DoD.

In addition to our primary mission of training the world’s finest medics, corpsmen, and techs and supporting our nation’s ability to engage globally, we want to continue to maximize the award of college or workforce credit for military training and experience and to speed entry into the workforce for thousands of returning servicemembers, should they decide to separate and return to civilian life.

Such collaborative initiatives have been recognized by a DoD spotlight within a report from the Office of the President as well as at a recent White House Roundtable discussion on military/veteran credentialing and civilian employment. We’re continuing this important initiative through two working groups for the White House Forum on Military Credentialing and state agencies such as the California Governor’s Interagency Council on Veterans. Outside the DoD, METC has been recognized by agencies such as the Institute for Credentialing Excellence.

The momentum is growing. More and more schools, state legislatures, and national agencies, have become interested in what we’re doing. It is an exciting time to be at METC and with its superstar team. I am excited about the future and look forward to continuing to partner and seek opportunities in order to take the training of the “world’s finest medics, corpsmen, and med techs supporting our nation’s ability to engage globally” to the next level.

More info: metc.mil
Haven Behavioral War Heroes Hospital, a full-service inpatient facility located within St. Mary-Corwin Hospital, Pueblo, CO, is using cognitive process- and exposure therapies to help combat veterans make order from the disorder of combat-related stress.

By Harry D. Silsby, MD, COL (Ret.) and Rachel Lentz, PsyD, Clinical Director Haven Behavioral War Heroes Hospital

When I was on active duty, I ended my career as deputy commander at our teaching program at our teaching hospital at Fort Bliss, TX, called William Beaumont. While there, I started a chemical dependency program patterned after a Navy program out of Long Beach, CA, begun by Capt. Joe Persh (who once treated Betty Ford). We treated servicemembers from all over the U.S. The arrival of managed care, however, dismantled these programs.

After I retired from the service in 1986, I began practicing at various corporations as a civilian, treating military personnel for various conditions such as drug and alcohol addiction. About seven years ago, a colleague of mine, Vernon Westrich, founded Haven Behavioral Health. I spoke with him about having an all-military component to treat post-traumatic stress disorder (PTSD) and chemical dependence and other co-occurring disorders.

Approximately 50-60 percent of the patients we see for PTSD come in with co-occurring chemical use disorders. We developed the military program using guidelines from the National Center for PTSD and Walter Reed Medical Center, modifying them as ideas as changed about PTSD. Today, the disorder is finally viewed as the psychological and physical condition that it is. Five years ago, there was still a lot of denial in the services, particularly the harder-core elements such as airborne units, Marine Corps, and special operations units. The upper echelon of military leadership has come to accept that PTSD is a real condition, though some lower NCO ranks maintain dissension about the reality that some of their subordinates suffer from a condition not of their own making. The services’ eventual recognition that PTSD is a real issue can be likened to DoD’s slow but ultimate realization that alcoholism is a real problem. Finally, in the early 1980s, alcoholism began to get the attention it deserved. I think that’s where we are today with PTSD.
“The purpose [of cognitive processing therapy] is to bring [patients] ‘into the present’ and [to help them] recognize that these physical cues do not represent Afghanistan in 2007—they represent Pueblo, CO, in 2013, or wherever else they happen to be in the current day.”

—Dr. Rachel Lantz, Clinical Director

Not Just a Physical Problem
One of the biggest discoveries with PTSD treatment seems to be that pharmaceutical/drug therapies do not provide a long-term solution to a disease that cannot be treated solely as a physical disorder. We’ve found that the best treatments for this multifaceted psycho/physio condition are evidence-based therapies such as cognitive processing therapy, dialectic behavioral therapy, exposure therapy, and anything that decreases arousal and overstimulation of the brain. I like the term “excitotoxicity”—when someone is exposed to trauma, the brain triggers fear and releases stimulatory neurotransmitters such as dopamine, norepinephrine, and glutamine, which excite the nervous system, sending a message to the pituitary gland that releases ACTH, a hormone that triggers the adrenaline glands to release the adrenaline. This process is called the “flight-or-fight” response: blood rushes to the muscles and digestion- and sleep-related functions stop, giving the individual greater physical means with which to address real, or, in the case of PTSD sufferers, the real feeling of trauma based on a previous traumatic reality. This hyper-excited nervous-system state can result in eventual destruction of the core elements of short-term memory recall. This is a normal reaction to an abnormal situation. Flashbacks and hallucinations triggered by physical stimuli such as a smell, a visual cue, or a sound are as real to many PTSD sufferers as though the events that caused the condition were happening all over again.

One treatment for PTSD is cognitive processing therapy (CPT), developed to treat any type of trauma-related response in people of all walks of life. Most of the therapy is conducted in a group setting where feedback can be maximized from one individual to the next, focusing on the root of specific experiences. Some of the combat veterans in treatment have experienced near-death experiences, which are replayed in their minds as if they are continual realities as opposed to the compartmentalized memories that healthy brain processes make of traumatic events. The goal of treatment is to help the PTSD sufferer to gain control of the feelings surrounding the trauma—effectively reducing or eliminating the fight-or-flight chemical triggers within the body—thus enabling the patient to see present-day realities for what they are, not what they appear to be. A lot of time is spent on reducing arousal or overstimulation through activities such as yoga, and physical training twice a day, helping the body release inhibitory neurotransmitters such as endorphins, which reduce physical as well as psychological-based pain. Some of these activities have the same effect on the body as drugs, albeit in a more natural manner. These activities help the body release “feel-good” chemicals such as serotonin, which controls appetite, sex drive, normal sleep cycles, and other positive processes that, in many cases, simply do not exist in a person with even mild forms of PTSD.
Rachel Lentz, PsyD, Clinical Director on Cognitive Process Therapy

CPT is the backbone of what we’re doing at Haven Behavioral. The therapy is divided into 12 sessions: CPT 1 (sessions 1-3), CPT 2 (sessions 4-7), and group therapy (sessions 8-12). CPT acknowledges that a person has experienced trauma that his or her mind cannot, for one reason or another, accept and compartmentalize as a memory; therefore, the experience lurks below the surface of the person’s consciousness, ready to reappear with a trigger event in the present. This memories may involve witnessing loss of life, loss of own limb, etc., locked away in the brain and not to disappear unless a triggering event brings them to the surface. The response may display as flashbacks, hallucinations, and other reactions that result when a smell, sight, or sound triggers the fight-or-flight mechanism.

What we do with CPT is first thank the brain for doing everything to keep this person safe. However, we must help the brain properly organize this experience as a memory, not a recurring reality. The first step is to let the patients know they are going to make sense of event they cannot seem to process, that they will understand what occurred, and that they are safe from it and will be able to speak and think about it without feeling like a prisoner of it. The next step is to discuss with patients how their world has changed since the event—e.g., before the event, they felt secure and had control of their surroundings, but now they no longer feel safe and must be extra-vigilant in re-establishing a feeling of control over their world. In many cases, the single event may have comprised multiple sub-events that need to each be addressed and organized in a chronological order to help the patient understand the reasons for each. As an important part of this event re-organization for the patient, we work with them so they can gain an understanding of their current beliefs within the five primary areas of life affected by trauma: safety, trust, power and control, esteem, and intimacy. The important thing here is that we look at helping them adjust their viewpoints on these so they are more realistic, not completely different.

Prolonged exposure therapy involves two parts: cognitive processing and a behavioral portion involving physical triggers to previous trauma such as anomalies in the ground, individual or group body language, deceased animals on the roadside, and road barriers. The therapy includes taking the patients out to areas physically similar to the combat environment.

In terms of exposure therapy, at first we were running group outings where particular individuals were hyper-vigilant during trips to the mall, restaurants, and other public places. They were on the constant look out for “IEDs” in the road and suspicious-looking individuals, taking self-protective measures such as having their backs to the wall inside restaurants so they could continually monitor their surroundings and, hence, maintain a sense of control over their situations.

We also take these folks out into the wilderness, which can appear similar to the surroundings where traumatic events may have occurred such as Afghanistan. After a number of outings, people who at first may not have been able to even leave the vehicle are eventually able to “reorganize” their thought processes and see Pueblo, CO, for what it is: not Afghanistan. In another scenario, we take patients out into back alleys that simulate environmental conditions in cities within Iraq or Afghanistan. After a series of visits, patients who initially saw the trash and manhole covers as potential harbingers of IEDs learned to see the objects as what they are.

Today, we’re getting referrals from over 60 installations around the world. These are the tough cases where individuals have failed outpatient processes and are nonfunctional in regular society.

There’s always a fear that after separation from service, veterans won’t get the treatment needed to not only make them productive members of society but to help them avoid criminal or suicidal actions. In many cases, these people may not have a PTSD-related condition but a personality disorder that either simulates or accentuates PTSD symptoms.

Another course track offered at Haven Behavioral addresses the special needs of women. Conducted in an isolated group-therapy format, women who’ve endured combat- and sexual trauma—often at the hands of their fellow servicemembers—face a double-edged sword most of their male counterparts cannot relate to. In combat, you have to have trust in your fellow soldiers, and in many cases, that trust is betrayed in situations of harassment or even rape. Unfortunately, this betrayal does not stop at the perpetrator: It can go all the way up the chain of command as reports of verbal abuse or sexual assault can be dismissed, leaving the victims angry and confused as to why their own leaders could leave them to cope with very real trauma on their own.

To date, we’ve treated over 1,200 males and around 175 females in the military program.

More info: havenbehavioral.com
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The Army Medical Department is searching for 68W health care specialists in the ranks of specialists and sergeants looking to further their career by serving as flight paramedics.

Soldiers who apply for and are accepted to the Army Medical Department’s prestigious flight paramedic program will have the opportunity to treat, stabilize, and provide in-flight medical care to the critically injured while flying aboard air ambulances during peacetime and combat operations. Applications will be processed on a first-come, first-served basis. Course allocations are 30 per class (15 active Army, 10 National Guard, and five Army Reserve), most of whom will have prior deployment experience.

**Targeted Regimen**
Flight paramedic training involves five weeks for the flight medic course at Fort Rucker, AL (ASI F3 producing course), 26 weeks for paramedic training at Fort Sam Houston, TX, and eight weeks for critical care transport training there as well. Paramedic Certification and Critical Skills Training will result in the award of ASI F2 (Nationally Registered Flight Medic).

The goal is to produce approximately 240 paramedic qualified flight medics each year. Army plans call for an increase in flight medics from the current 683 authorizations to 1,058 authorizations in fiscal year 2017. The inaugural course to create flight paramedics began at the University of Texas, Health Sciences Center, San Antonio, TX, in February 2012 with a class of 26 68Ws.

**Lessons-Learned Focus**
The need to upgrade training is driven by the complex types of injuries emerging from Iraq and Afghanistan and long medical evacuation flights. The new course provides the potential to improve the battlefield survival rate with flight medics trained to paramedic level with additional hands-on experience and more than 1,000 hours of medical skills training.

During the past two years, we identified a gap in en-route critical care air evacuation capability now addressed by the flight medic paramedic-level training for those medics on evacuation aircraft. Paramedic is the base entry-level certification standard requirement for transport systems in all civilian emergency medical services across the U.S. However, soldiers on the battlefield are currently transported by 68Ws with National Registry Emergency Medical Technician (NREMT)-level qualifications.

Our combat developers continually evaluate battlefield lessons learned to adjust personnel and equipment capability and training requirements to improve battlefield survival rates that currently are the highest in the history of the Army. As an example, the flight paramedic course is designed to improve en-route critical care during air evacuation. The Army Medical Department Center and School Medical Capabilities Integration Center is looking at determining if one of the three medics assigned to a ground ambulance should be a paramedic to provide equivalent care for ground evacuation.

**Moving Upward and Onward**
Soldiers who have already obtained ASI F3, Aeromedical Evacuation (Rotary Wing), who apply and are accepted for this program will attend two courses in a PCS status at Fort Sam Houston. The 300-F1, Flight Paramedic Course lasts 26 weeks, and successful completion results in the graduate obtaining NRP Certification. The eight-week 300-F2, Critical Care Paramedic Course provides the hands-on clinical training required for soldiers to become proficient in this field.

68W soldiers who do not currently hold ASI F3 will attend the 300-F6 Flight Medic Course at Fort Rucker and then proceed to Fort Sam Houston for the aforementioned courses. Upon completion of the program, soldiers will be awarded ASI F2 and be assigned to an air ambulance company. Soldiers in a specialist- or sergeant promotable status will earn 78 military education points.

Applicants may submit their request for schooling with all supporting documentation to MSG Stephen Welch, AMEDD Proponent NCO at (502) 613-5233. Application packets will include:
- DA Form 4187 signed by his/her Commander (Encl 5)
- Enlisted Record Brief
- DA Form 705 (APFT Card)
- DA 4186 (Medical Recommendation for Flight Duty)
- Copy of current NREMT-B and BLS Card
- Army EMS Credential Background Questionnaire
- EMS Application, UTHSCSA, Bluff Creek Tower Campus EMS Program
- Applicants with a permanent profile (DA 3349) that require them to take an alternate aerobic event will submit a copy of their profile with their application to determine course eligibility.

More info: www.armymedicine.army.mil
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Since Sept. 11, the face of military medicine has changed, both in its complexity and in its need to coordinate a multitude of medical and non-medical staff members into the rehabilitation and transition care plans for those evacuated from the operational theater. U.S. casualties are surviving at unprecedented rates due to the positioning of far-forward medical staff, implementation of “buddy care,” the expeditious medical evacuation team, and system and advancements in treatment modalities.

In 2006, Naval Medical Center San Diego was funded to become the third DoD center for amputee care and rehabilitation, given that approximately 25 percent of the casualties from Operations Enduring Freedom and Iraqi Freedom were West Coast-based sailors, soldiers, Marines and airmen. Returning these servicemembers closer to their units and/or families for the additional non-medical support would be advantageous to their recovery. This funding targeted staffing and facility construction to support a steady-state population of 40–50 combat injured amputees. A 27,000-square-foot space occupied by the physical and occupational therapy department was completely renovated to house physical and occupational therapy, a gait (motion analysis) laboratory, and a prosthetics clinic with a fabrication lab, in addition to related offices. This project was completed in October 2007.

As a historical note, the original wording for C5 was Comprehensive Combat Casualty Care Center, but that changed to Comprehensive Combat and COMPLEX Casualty Care (C5) prior to the ribbon-cutting ceremony. We acknowledged that we did not have a separate “center” for this care, as the C5 space and program was incorporated into the larger preexisting medical center, which provides an all-inclusive location for patient needs such as dermatology, ENT, and pain management (Figure 1).
Also, realizing that the casualties arriving from the operational theater were not always combat-related but were complex in treatment and rehabilitation requirements, the fifth “C” was changed from Center to Complex. This acronym has allowed NMCSD’s C5 to take on additional “complex casualties” (i.e., motor vehicle trauma, military training accidents), severe sports injuries, and disease states (lymphoma, other cancers) that require long-term rehabilitation, comprehensive care, and case management.

Staff applying this model of care include nurse case managers; primary care managers (nurse practitioners); a clinical pharmacist; behavioral health providers (clinical psychologists, neuropsychologists, and psychiatrists); prosthetists; physical medicine and rehabilitation physicians; psychology technicians; prosthetic technicians; administrative support personnel; and physical-, occupational-, and recreational therapists.

The Army, Marine Corps, and Navy communities provide a cadre of enlisted- and officer personnel to oversee a designated unit/command to which these recovering servicemembers are assigned for administrative command and control (the “non-medical” services oversight). Figure 1 depicts the various services that support this patient population. The C5 team quickly identified that this group of patients required numerous medical and non-medical services and that there was a tremendous need for coordination of these services. Accordingly, the C5 program focuses on this integration and coordination through medical and non-medical case management. See figure 1.

Coupled with the medical evacuation route from the operational theater to Landstuhl, Germany, then to Walter Reed/Bethesda, MD, the criticality of injuries has resulted in the majority of acute- and inpatient care being conducted at those facilities. This has resulted in San Diego receiving more than 95 percent of these patients for the rehabilitation phase of care (all servicemembers attached to the West Coast, including those in the Army, since it is the regional tertiary care facility suited to serve the population that requires multiple specialty services not found in the community/family practice hospitals). Stable injured and/or ill patients would be directly sent to San Diego from the theater of operations via Landstuhl and may have a minimum inpatient stay (one–five days). The majority of the critically injured had been hospitalized at Walter Reed/Bethesda and ready for discharge or a short inpatient stay upon arrival (one–five days).

Since 2007, Naval Medical Center San Diego has had more than 2,400 servicemembers evaluated and treated through the C5 program. Of these, 236 were amputees. Presently, the C5 program is overseeing the care and rehabilitation of 180 patients, 65 of whom have amputations. The program, centered on a medical home model, comprises the following major elements:

- Psychological health services that include an eight-week Intensive Outpatient Program (IOP) for servicemembers suffering from post-traumatic stress.
• Comprehensive primary care management (assignment of a primary care manager (PCM) to each patient for the duration of their rehabilitation.

• Comprehensive case management assignment of a designated nurse case manager for coordinating care and related medical services for the duration of their rehabilitation and to transition; an embedded VA healthcare liaison with C5 case managers has greatly enhanced transition handoffs and support.

• Weekly multidisciplinary care team meetings to discuss treatment plans for new patients and review ongoing care plans for those in long-term rehabilitation.

• Video-teleconferencing meetings with Walter Reed/Bethesda health care team members to review the historical care/treatment and current status of patients in the pipeline due to transfer for rehabilitation at Naval Medical Center San Diego. These conferences also serve to introduce the NMCSD staff to the transferring patient and his/her family members and answer any questions and provide information as to what they can expect when they arrive here. These conferences have served as excellent tools for communication and have facilitated smooth transitions from one healthcare arena to the next.

• Distribution of iPads to wounded, ill, and injured servicemembers to facilitate their access to information, use of specific applications to aid in appointment reminders, and communication. The iPads are used as adjunctive devices with varied treatment modalities.

• Facilitation of handoffs for transition back to duty or to the VA system through the utilization of the Balboa Career Transition Center. This center was established in 2006 in support of the 97+ percent of servicemembers that do not remain on active duty. It is comprised of VA benefits and vocational rehabilitation counselors, VA healthcare liaisons, and Department of Labor representatives.

• Integration and collaboration associated with Army Warrior Transition Unit, Marine Corps Wounded Warrior Battalion Detachment, Navy Medical Treatment Company, Reserve Component Command and Navy Safe Harbor personnel to coordinate non-medical services (i.e., pay, transportation, housing,
travel) in support of service members and their families. This collaboration also involves weekly meetings with the NMCSD command’s senior leadership (deputy commander and often commander) to ensure situational awareness and eyes on any issues.

- A program that formally trains amputees to serve as peer visitors for new amputee patients.
- Integration of a wide breadth of recreation, sports, community reintegration, and respite care activities to support the rehabilitation and recovery care plans for servicemembers and also their families.
- Integration of a robust Armed Services YMCA volunteer program and numerous nonprofit services in support of non-DoD-funded requirements.

Additionally, the C5 program was a catalyst for the development of several adjunctive initiatives for patients requiring specialized services due to their diagnoses and injuries. One collaborative initiative involving DoD, VA, and civilian medical staffs targets reconstructive surgeries, and specialized treatments to address scars and disfiguring conditions. It is known as Project C.A.R.E. (Comprehensive Aesthetic Restorative Effort) and has resulted in exceptional outcomes for patients treated by these specialists.

Experiencing challenges with high workloads, limited space, and staffing limitations in 2011, Johns Hopkins University Applied Physics Laboratory (JHUAPL) operations and systems engineers were contracted to address these challenges and assist in outlining future sustainment of prosthetic services and associated rehabilitative care for those severely injured patients with amputations and/or polytrauma. This effort has resulted in streamlining numerous processes and enhanced access to care, and it also serendipitously facilitated an expanded collaboration with VA colleagues to outline future care delivery. The creation of two electronic tools has provided NMCSD the ability to not only effectively track patients in the C5 program but to capture data and outcomes related to their treatment plans. The second tool has provided us an ability to analyze workload for forecasting future capacity numbers.

This comprehensive model of care has been integral in coordinating the multitude of individuals, services, and departments that care for severely wounded, ill, or injured military members. The complex medical system in which these individuals and their families find themselves requires integration, collaboration, and strong communication to ensure smooth navigation, effective recoveries, and seamless transitions. Having these services embedded under one “umbrella” in primarily one location and tied together with multidisciplinary meetings has proved to enhance compliance with care and help these individuals progress in their rehabilitation and recovery. As operational presence decreases in theater and deploying servicemembers return to garrison and their families and/or discharge from active duty, there remains an unknown tail to these 12 years of intense conflict for those who did and did not come through the medical system. We must ensure a strategy for sustainment of tracking and caring for this new population of veterans and their family members. We must be more vigilant than ever in monitoring the physical and psychological well-being of these individuals and their families and be prepared with ongoing programs to support their needs.

The motivation and resilience of this population of servicemembers and families who have sacrificed so much continues to inspire NMCSD staff, who are privileged to care for them. NMCSD strives to keep the promise of C5’s mantra: “Renewing Hope, Rebuilding Lives, and Revitalizing Spirits” as the future unfolds.

More info: navmed.navy.mil

Disclaimer: The views expressed in this article are those of the author(s) and do not necessarily reflect the official policy or position of the Department of the Navy, DoD, or the U.S. government.

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Several strategic changes have recently been made in the structure of DoD trauma care advisory groups. The Committee on Tactical Combat Casualty Care (CoTCCC) has been relocated from the Defense Health Board to the Joint Trauma System (JTS) Additionally, the JTS has just been designated as the new Defense Center of Excellence for Trauma.

By Chad Samuels, TDM Editor

The CoTCCC began in 2001 as a U.S. Special Operations Command (USSOCOM) biomedical research effort to incorporate emerging technology and information into the TCCC guidelines regularly, ensuring the best possible efforts for pre-hospital battlefield trauma care. The membership of the CoTCCC includes combat medics, corpsmen, and pararescue jumpers as well as physicians and physician assistants. The CoTCCC was first established at the Naval Operational Medicine Institute (NOMI) with funding provided by the USSOCOM biomedical research program. It was supported by the Navy Bureau of Medicine and Surgery from fiscal year 2004 through 2009.

The CoTCCC developed a critical partnership with the U.S. Army Institute of Surgical Research (USAISR) beginning in 2004. The USAISR assumed a leadership position within the DoD in developing and evaluating technology focused on the TCCC provider, and the subsequent USAISR/CoTCCC/ USSOCOM partnership resulted in accelerated testing and rapid fielding of lifesaving devices such as tourniquets and hemostatic...
agents. The USAISR also headed up the USSOCOM TCCC Transition Initiative to ensure that lifesaving new technologies and training were fast-tracked to deploying Special Operations units and that feedback about this training and equipment was obtained upon the units’ return from combat operations. A letter from the Commander of the U.S. Special Operations Command to the Army Surgeon General acknowledged the program’s remarkable success.

In fiscal years 2007 to 2010, the Office of the Surgeon General of the Army also provided strong support for the activities of the CoTCCC. Due to increasing visibility of TCCC in the conflicts in Iraq and Afghanistan, the CoTCCC was realigned at the direction of Assistant Secretary of Defense (ASD) for Health Affairs to function as a subgroup of the Trauma and Injury Subcommittee of the Defense Health Board (DHB). The DHB is the senior external advisory group to the Secretary of Defense on medical issues. In 2012, however, it became apparent that the CoTCCC would function better as part of the JTS.

**Moving Ahead with JTS**

The JTS has been a product of the wars in Afghanistan and Iraq. In December 2004, ASD/HA, in concert with the Service Surgeon General, directed the establishment of a Joint Theater Trauma System (JTTS) and Joint Theater Trauma Registry (JTTR) in Iraq as a means of improving hospital-based trauma care for the nation’s combat casualties. In March 2005, then-Col. Doug Robb established the JTTS for the entire U.S. Central Command Area of Responsibility. The JTS now conducts various performance improvement initiatives, including a weekly worldwide teleconference to review all severely injured combat casualties from the preceding week. It maintains a robust set of 39 clinical practice guidelines to provide evidence-based best-practice recommendations for trauma care. The JTS also maintains the DoD Trauma Registry, formerly known as the JTTR. The current DoD Trauma Registry is the largest combat data set ever to have been assembled in our world’s history. Analysis of the data has helped to facilitate performance improvement in trauma care; provide evidence-based clinical practice guidelines; direct procurement of personnel, training, and equipment; and guide future trauma-related research.

The addition of the CoTCCC to the JTS (now the Defense Center of Excellence for Trauma) will enable this unique organization to have optimal visibility on the entire continuum of combat casualty care. It will also allow the JTS to better assist the armed services in bringing about continued improvements in combat casualty care for both the pre-hospital and hospital settings. The cooperative effort between USAISR, the JTS, the services, CENTCOM, SOCOM, and the CoTCCC has already been instrumental in producing the best survival rate in history for America’s combat wounded in Afghanistan and Iraq.

More info: health.mil

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Capella University

By Micheal A. Kemp, Ph.D. CEM, Faculty Chair
School of Public Service Leadership

The modern military environment provides airmen, Marines, sailors and soldiers with the practical experience required to succeed in a career in public safety. Our servicemembers are highly specialized individuals capable of completing complex tasks. But qualifying for a career in public safety isn’t easy. Just recently, the International Association of Emergency Managers (IAEM) decided that for someone to receive the coveted Certified Emergency Manager designation, one is required to have a mix of training, practical experience, and a four-year degree. Unfortunately, the walls of a traditional classroom restrict many of our military servicemembers from the opportunity of receiving a quality education they will need to succeed.

Capella University offers a variety of programs for those interested in the public safety- and public service fields and uses an online format that brings the classroom to the military learner wherever they may be. The asynchronous format is a learner-centered teaching method that infuses flexibility into the classroom. At Capella, instead of meeting on specific days or times, courses are accessible 24/7.

Typical courses consist of several working units comprised of competency-based lessons. Utilizing technology such as email, e-courses, online forums, and audio and video recordings, learners communicate with their peers and faculty for in-depth discussions. For example, in Capella’s course on coordinating a modern emergency management program, learners prepare a community outreach presentation outlining a strategy to improve community input in local disaster preparedness.

At Capella, our learners participate in discussions with their peers, review interactive media pieces, and submit written assignments after researching topics applicable to the course readings—all online. The conveniences of e-learning make it possible for our military to remain competitive whether deployed, in garrison, or on leave.

More info: capella.edu

Above: Micheal A. Kemp, Ph.D. CEM, faculty chair with Capella University’s School of Public Service Leadership (Capella University)

Bellevue University

By Willie Woolford, Assistant Director, Military Programs

Maximizing your credit transfer and accelerating your degree are two concepts critical to success—and two things Bellevue University does very well. Military students can transfer in all the American Council on Education-recommended credit on their military transcript toward one of the university’s career-relevant bachelor’s degree programs. The university also offers 18 master’s degrees and a Ph.D. program.

Additionally, Bellevue University accepts credits from other accredited schools, CLEP/DSST tests, and many civilian certifications and licenses. You can also work toward credit in our Experiential Learning Assessment program, which assigns credit to life experiences.

With almost 50 years of serving the military, Bellevue University is a leader in providing quality education to our servicemembers. Just outside the gates of Offutt AFB in Bellevue, NE, the university provides regionally accredited degree programs online and in-class and has military students in more than 50 countries.

Not only does Bellevue University provide a high level of transfer, but our all online format allows students to fit courses into their schedules from anywhere they can access the Internet.

As the university is close to the base, many of the university’s staff and professors have military backgrounds, providing a high level of military friendliness and understanding.

One of our Military Outreach team members (all are retired military) can schedule a courtesy evaluation to help you roadmap your degree. They can help pinpoint where you currently are to develop your own education roadmap.

More info: military@bellevue.edu

Above: Bellevue University President Dr. Mary B. Hawkins and Army Brigadier General Jason Evans (a Bellevue University alum) open the University’s new Military Veteran Services Center (Bellevue U)
Tactical Defense Media is proud to introduce Security & Border Protection, a new magazine featuring interviews with top policymakers, DHS program updates, CBRNE news, Immigration and Customs Enforcement (ICE) and analysis, and technology updates. Topics include:

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With support from the U.S. Army special operations and medical research communities, RevMedx developed XSTAT—the first self-expanding hemostatic dressing capable of stopping high-flow arterial bleeding from deep, narrow wounds within seconds and without direct pressure.

By John Steinbaugh, Director of Strategic Development, RevMedx, Inc.

In 2012, I joined the RevMedx team following 25 years of service in the Army—five years in the infantry and 20 years as a Special Forces medic. During my last few years in the Army, I managed the development of cutting-edge medical products. In this role, I discovered a gap between end users and device developers. My decision to join RevMedx was based on their unique approach to technology development.

The company is focused on creating products relevant to combat medicine. Our team understands that the battlefield is fluid and the needs of the medic change from year to year and country to country. Features that matter—cube space, weight, versatility, and simplicity—are key drivers behind every product we design. Active duty medics with combat experience test and evaluate our products at every step in the development process.

Advancing Hemorrhage Control
RevMedx, Inc. was founded in 2009 to find a better way to treat junctional hemorrhage. Uncontrolled hemorrhage
is the leading cause of death on the battlefield. The lack of an effective treatment for bleeding in locations not accessible to standard tourniquets, such as a junctional wound in the pelvis or shoulder, is a constant challenge for combat medics.

Direct pressure is the most effective way to control severe bleeding, and mechanical occlusion of vessels is often necessary to reduce the flow of blood to a level that can support clot formation. With hemostatic gauzes this compression must be applied manually, but in tactical situations, it is often difficult to achieve and maintain vascular compression in junctional injuries. Critical casualties are expected to be stabilized, packaged, and en route to definitive care within the first 10 minutes. These “platinum 10” are crucial to a patient’s survival. Reducing treatment time and eliminating the need for direct pressure are clinically meaningful advantages for medics.

XSTAT works by applying a group of small, rapidly expanding sponges into a wound cavity using a lightweight applicator. The sponges possess a fluid-like flow quality, permitting them to spread into irregular wound crevices, gaps, and fissures. In the wound, the sponges expand upon contact with blood. In contrast to gauzes—many of which shrink when wet—the spring-like quality of the XSTAT sponges gives the dressing an innate ability to generate and maintain hemostatic pressure. Each XSTAT sponge contains a radiopaque marker for detection via X-ray.

The XSTAT applicator is designed to deliver sponges into deep, narrow wounds through pooled blood. It is ready to use out of the package with a telescopic handle to minimize cube space and a valve tip that allows for controlled sponge delivery.

In a published study with aggressive non-compressible hemorrhaging, XSTAT provided statistically significant improvements in blood loss, hemostasis, and survival compared to a standard hemostatic gauze with shorter packing time and no direct pressure.

RevMedx has also designed a smaller version of XSTAT to treat narrow wound tracks. The small applicator includes a detachable plunger and snap-fit features to secure multiple devices together for low-profile packaging and storage. In pilot testing, the small XSTAT is 100 percent successful at treating a range of narrow entrance ballistic injuries.

XSTAT is currently an investigational device, limited by federal law to investigational use. RevMedx is currently seeking FDA clearance for the product.

**Compression Bandage Evolution**

Building on the success of the XSTAT program, RevMedx is developing a portfolio of products that will deliver effective hemostatic pressure to a wide range of trauma wounds. The next product to launch will be AirWrap, a lifesaving advance in bandage design.

AirWrap is an elastic bandage with an integrated air bladder that creates and maintains hands-free focused pressure. It is placed over a primary dressing with the air bladder positioned directly over the wound site. The elastic bandage is wrapped around the wound and secured, and a bulb pump is used to inflate the bladder. A pop-up valve attached to the bladder acts as a pressure indicator when a recommended inflation volume is reached. AirWrap is uniquely effective in generating and maintaining pressure continuously through all stages of pre-hospital evacuation.

XSTAT and AirWrap are both patent pending. RevMedx is also developing a next generation hemostatic dressing that has shown tremendous efficacy in initial testing.

More info: revmedx.com
Defibrillator Gets Army OK

Philips, maker of medical and household innovative products, has received an Airworthiness Release (AWR) Certification for its HeartStart FR3 automated external defibrillator (AED) from the U.S. Army.

The U.S. Army Aeromedical Research Laboratory (USAARL) confirmed the completion of extensive aeromedical testing and evaluation of the FR3, both in the laboratory and aboard an Army HH-60M helicopter. The certification validates the safety of the aircraft and its subsystems, the aircraft crew, the device itself, and ultimately, the patient.

The HeartStart FR3 joins the IntelliVue MP2 patient monitor and the HeartStart MRx monitor/defibrillator in Philips’ military solution set with this certification recognition.

Philips’ opportunities with the U.S. military are expanding throughout the medical care continuum, which covers point-of-injury on the battlefield through en route medical transport and clinical care. The military continues to look to Philips, a leader in imaging systems, monitors and defibrillators, to equip each care echelon in the military.

The HeartStart FR3 provides best-in-class advantages to support military personnel. It is small, light, and easy to maneuver in tight places.

Recognizing that time-to-therapy matters, the HeartStart FR3 significantly reduces deployment time by eliminating steps to help responders start delivery of the right therapy—CPR or defibrillation—on the patient faster. The FR3 automatically powers on when the Philips HeartStart FR3 Rigid System Case is opened, and the device also features easy to access, pre-connected peel-and-place pads that do not require opening a foil pouch. These unique features help speed therapy delivery. In addition, Philips tools make the forwarding of data from the field to the hospital easy so the hospital can mobilize appropriate resources and the responders can continue to focus on the patient.

More info: philips/military.com

SAM Medical Recognition

The Telly Awards has named SAM Medical Products as a bronze winner in the 34th Annual Telly Awards for their pieces titled The Adventures of Sam Medic (Pelvic Sling II and SAM Splint). The qualified field comprised nearly 12,000 entries from all 50 states and numerous countries.

The Sam Medic videos won awards in the category of Health and Wellness for online videos. By using a smart phone to scan a QR code printed on the splint product label, users access a short, scenario-based Sam Medic training video demonstrating proper product use. Training videos were created by Happy Trails Animation and include the SAM Splint, the SAM Pelvic Sling II, and the SAM Junctional Tourniquet.

More info: sammedical.com

DARPA-funded Sepsis Treatment

A team consisting of Battelle, NxStage Medical, Inc. and Aethlon Medical has won a contract from DARPA to develop an innovative medical device that may save the lives of soldiers—and civilians as well—by treating sepsis. The contract—which is funded in phases and could be as large as $22.83 million and last as long as four years—is for leading one of DARPA’s Dialysis-like Therapeutics (DLT) System Integration projects. Key subcontractors, NxStage and Aethlon, will design, develop, test, and validate an advanced, portable medical device that exhibits the technical innovation for which DARPA projects are known and coordinate integration of key technologies developed during the overall DLT program. This funding does not include human clinical trials that may be required prior to military use and/or FDA clearance for sepsis-treatment technologies.

The problem to be confronted is more severe than is commonly known, as many as 10 percent of combat wounds result in life threatening infections that ultimately lead to septicemia and/or sepsis.

DARPA created the DLT program to develop a portable device that creates a holistic treatment for sepsis. The device is intended to remove blood from the body, separate harmful “dirty” agents from the blood, and return “cleaned” blood to the body in a manner similar to dialysis treatment for kidney failure. DARPA has made significant investments in its DLT effort to date to multiple contractors for the development of key blood purification and diagnostic technologies that could contribute to the ultimate device.

More info: darpa.mil

Vital Signs Product Cleared by FDA

RDT announced in July that its latest product, Tempus Pro, has been CE Marked and 510k cleared to market by the U.S. Food and Drug Administration. All medical products must achieve these clearances before they can be marketed in the U.S. and much of the rest of the world.

Tempus Pro is a new concept in vital signs monitoring that places the needs of the military medic and pre-hospital care professional at the heart of its design. Groundbreaking in functionality, the monitor is light enough to carry to the patient, small enough to hold in one hand, and powered by four AAA batteries. The new Tempus Pro system is ready when it is needed and allows for continuous heart rate monitoring in the field.

The system comes with an adhesive patch that connects to the patient, and its strap allows the monitor to be attached to the patient’s upper arm or wrist. The device is very portable and lightweight, and the patient can continue to move and interact with their environment during monitoring. The Tempus Pro’s small size and lightweight design make it ideal for use in the field, where space and weight are at a premium.

More info: sammedical.com
hand, and rugged enough to deploy in any situation.

Tempus Pro provides all the integrated features and capabilities expected in a market-leading vital signs monitor: unmatched durability, daylight readable display, long battery life, an intuitive interface, and a glove-friendly touch screen that enables ease of use for both advanced and basic life support paramedics and emergency practitioners.

The platform is designed to be scalable to accommodate immediate and evolving needs and budgets, with the ability to add advanced capabilities post purchase. This will enable users to perform a new range of diagnostic processes on patients using the same battery and display already being carried. This flexibility and scalability enables users to leverage the most from their pre-hospital/transport monitor investment.

More info: rdltd.com

Advanced Circulation

Advanced Circulatory, manufacturers of ResQGARD and ResQPOD, has named Combat Medical Systems (CMS) its master distributor to the U.S. DoD and federal agencies. The ResQGARD and ResQPOD are circulatory enhancement devices designed to treat low blood pressure and improve blood flow to the heart and brain in hypotensive patients. These products are supported with extensive scientific and clinical data.

ResQGARD is for treating spontaneously breathing casualties who are hypovolemic and have symptoms of low blood pressure: candidates include casualties who present with low blood pressure due to blood loss, dehydration, heat stroke, easy sepsis, and orthostatic intolerance. The device creates slight resistance when a casualty inhales, effectively increasing blood flow and circulation.

ResQPOD enhances circulation during basic or advanced life support CPR. This simple non-invasive device regulates pressure in the chest and improves blood flow to the heart and brain. It helps circulate drugs more effectively and does not restrict patient ventilation.

More info: combatmedicalsystems.com

Spinal Cord Research

The fiscal year 2013 Defense Appropriations Act provides $30 million to the DoD Spinal Cord Injury Research Program (SCIRP). The SCIRP challenges the scientific community to design innovative research that will foster new directions for and address neglected issues in the field of SCI-focused research.

The vision of the SCIRP is to advance the treatment and management of spinal cord injury and ameliorate its consequences relevant to injured servicemembers. This program is administered by the U.S. Army Medical Research and Materiel Command through the Office of the Congressionally Directed Medical Research Programs (CDMRP).

More info: cdmrp.army.mil

Cancer Research

The fiscal year 2013 Defense Appropriation Act provides for $15 million to the DoD Peer-Reviewed Cancer Research Program (PRCRP) to research cancers not addressed in breast, prostate, lung (excluding mesothelioma), and ovarian cancer research programs currently executed by the DoD U.S. Army Medical Research and Materiel Command (USAMRMC).

New Military Relevance Focus Areas for FY 13:

- Susceptibility to developing cancers due to exposure to militarily relevant environmental or chemical carcinogens (including transgenerational effects)
- Identification of predictive and prognostic biomarkers of developing cancers due to exposure to militarily relevant environmental or chemical carcinogens
- Molecular mechanisms by which environmental influences associated with military exposures alter gene structure, stability, and expression
- Examination of cancer diagnosis and prognosis effects on the psychosocial well-being of military beneficiaries

More info: cdmrp.army.mil

AITEC Donates $150,000 to the Wounded Warrior Project

AITEC, the Alternative Investment Technology Executives Club, announced that that its charity golf tournament, held at the Leewood Golf Club in Eastchester, New York, raised $150,000 for the Wounded Warrior Project.

The mission of the Wounded Warrior Project is to honor and empower wounded warriors by raising awareness and enlisting the public’s aid to meet the needs of servicemembers injured in the line of duty.

It is estimated that over 50,000 servicemen and women have been physically injured in recent military conflicts, another 320,000 have experienced traumatic brain injury while on deployment, and as many as 400,000 additional service members live with the invisible wounds of war including combat-related stress, major depression, and post-traumatic stress disorder.

“There are many great organizations that provide the unique and highly specialized services crucial to the recovery of our injured servicemembers,” said Chris Turek, AITEC board member. “Many of these groups have limited funding, [so] the donation from AITEC will contribute to making these much needed services more widely available.”

More info: woundedwarriorproject.org
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Calendar of Events

Aug 12-15
MHSRS
Ft. Lauderdale, FL
mhsrs.org

Aug 13-17
Fire Rescue Int’l
Chicago, IL
iafc.org

Sep 8-12
EMS World
Las Vegas, NV
emsworldexpo.com

Sep 20-23
NGAUS
Honolulu, Hi
ngaus.org

Sep 24-26
Modern Day Marine
Quantico, VA
marinemilitaryexpos.com

Sep 28
SOMA Mini- Conference
Fayetteville, NC
 specialoperationsmedicine.org

Oct 18-19
HOTZONE
Houston, TX
hotzone.mobi

Oct 21-23
AUSA
Washington, D.C.
ausa.org

Oct 28-31
Tactical Operations Conference
Orange Beach, AL
atoa.us

Nov 5-6
SOFEX
Fort Bragg, N.C.
sofex.org

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¹ Based on 2011 Member Communications Trend Survey.

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