The Army Trauma Training Course in Miami: CRNAs Learning the Ins and Outs of Pre-Deployment Readiness

Serving in and deploying with a U.S. Army Forward Surgical Team (FST), or the newest configuration termed a Forward Resuscitative Surgical Team (FRST), is not your average daily anesthesia environment. The FRST medical providers must take unique challenges and considerations into account when preparing for a deployment.

The Army Trauma Training Detachment (ATTD), located in Miami, Fla., serves as a cadre (a small group of people specially trained for a particular purpose or profession) for the Army Trauma Training Course (ATTC), an important component of pre-deployment readiness training for U.S. Army medical teams. Jackson Health System, which includes the Level 1 Ryder Trauma Center, works collaboratively with the ATTD staff to host and train healthcare teams to put them through their paces before they deploy. “Essentially, an FRST that is preparing to deploy, comes to ATTD for a two-week course,” explains John Wilson, CRNA, EMTP, LTC, AN, USA, one of the facilitators at ATTD.

The course incorporates classroom lectures, team building concepts, and hands-on skill stations. The CRNAs can practice central lines and airway management skills for difficult airways. The course ends with a culminating exercise of six 12-hour shifts working in the trauma center. With temporary medical credentialing in place at Ryder Trauma Center for all Army providers, these real-world experiences allow individuals to hone their clinical skills. More importantly, the exercise provides FRST with the opportunity to work together and implement the Army’s team-building concepts, bringing CRNAs together with technicians, emergency medicine physicians, surgeons, and physician assistants to coordinate patient care. “Many times, this is the first time they’ve actually gotten together as a team,” continues Wilson, explaining how many Army medical providers have full-time, hospital-based assignments away from the FRST when they are not tasked to deploy. “They have to figure out what their strengths and weaknesses are, both individually and as a team, and develop a relationship.”

While they are working at the Ryder Trauma Center, the FRST must effectively triage trauma patients, support or secure their airway as needed, start IVs or place central lines, perform a primary and secondary survey according to Advanced Trauma Life Support (ATLS) standards, draw blood for lab work, and, finally, determine if they need further diagnostic work-up (e.g., a CT scan), or to go straight to the operating room for emergency surgery. “We, the faculty, facilitate the teams’ training to ensure they’re getting a quality experience, but we also ensure that they provide patient care that adheres to the standards and protocols of the Ryder Trauma Center,” Wilson explains. The teams are usually deployed within a few months of their time at Ryder Trauma.

Beginnings

The first week of the two-week training is simulation, taught at The Michael S. Gordon Center for Research in Medical Education, a component of the University of Miami Health System and School of Medicine. The Gordon Center uses a wide array of simulators. “We just got a new junctional tourniquet mannequin, and it can mimic junctional bleeding, which is one of the big killers on the battlefield,” says Wilson, referring to patients with challenging wounds to the groin or shoulder region. But, Wilson goes on to explain, “We have patients simulate burns so the trainees can manage and take care of patients with burn injuries. We have mannequins that can help them facilitate airway management as well as placing central lines. Trainees can practice on the simulator before actually applying them to real patients.” Overall, the training that Army FRSTs participate in at the University of Miami’s Gordon Center is a testament to the value of high-quality simulation as well as the success of military-civilian partnerships.

In the trauma center, the FRST, much like in actual combat situations, handles a broad spectrum of trauma and medical patients. While battlefield trauma (e.g., gunshot wounds, blast injuries) is their forte, other common mechanisms of trauma (e.g., motor vehicle accidents) still occur in the deployed setting. On top of that, medical problems associated with the harsh environments in which U.S. Army soldiers often work (e.g., dehydration, heat-related illness, rhabdomyolysis) can also occur. Therefore, it is important for the FRST to discern the subtleties between the needs of the casualties under their care, and sometimes identify when multiple, different physiologic insults are occurring within the same patient. The ultimate goal is to, “manage their patients most efficiently,” explains Wilson.

When it comes to medical supplies and equipment, all FRST members must understand their unit’s capabilities and their role within the larger deployed Army healthcare system. One major difference between medical care provided in the U.S. and the deployed care provided by FRSTs is that FRSTs do not have CT scanners and typically do not have X-ray machines. In a combat theater of operations, only larger Combat Support Hospitals (CSHs) have CT scanners. So, a patient requiring medical imaging beyond an ultrasound would be evacuated by ground or air to the larger CSH supporting the FRST. Yet advanced medical imaging is only one issue of many an FRST faces in an austere environment. Without a neurosurgeon the FRST, “may be limited in their ability to manage a head trauma,” says Wilson. As a vital component of treating trauma patients, the limited resource of blood products for transfusion is a constant challenge that must be managed by FRSTs. In some instances, an immediate walk-in blood drive can be set up if there is a need and there are enough soldiers at the site to donate.
As for holding capabilities, the FRST has enough supplies to handle a patient for up to 72 hours. After that, they should be discharged back to duty, or else they will require transfer to the CSH. All locations “have a medical evacuation platform” to accomplish this, says Wilson.

**Team Composition and Training**

“Usually it’s a 20-person team,” says Wilson. “Typically, there are two CRNAs, an OR nurse, surgical techs, medics, other nurses, and four surgeons,” as well as a field medical officer and a detachment sergeant to handle the bulk of the Army’s administrative requirements. Wilson says the makeup of the team is currently in transition from the older FST model, to the newer FRST configuration, with certain providers being added or removed as deployed missions evolve. Once the FRST is in place in their deployed setting, the team may immediately face the challenge of being split.

Although not codified in Army doctrine, FRSTs commonly divide their personnel between two locations to expand their medical reach, and strategically place them closer to where potential casualties will be. “A lot of times, the team is not located together, which makes it even more challenging for the anesthesia and surgical team. Now you have just one CRNA, who could potentially have multiple patients to triage, prioritize, and determine who to take to the OR. If they have difficulty with the airway, or difficulty managing the patient, they’re the only one there,” explains Wilson.

It is imperative for the CRNAs to work with their colleagues to make sure the other nurses or medics have enough cross training to assist them, and be cognizant of what is needed when placed in these situations. “Ultimately, we have to find a balance between the protocols at Ryder Trauma Center, and the realities of military medicine to give our trainees the most authentic training experience,” explains Wilson. “We do an after-action review following each case, and ask questions such as, ‘What did we do well? What do we need to work on? Would we have done anything differently if we were downrange?’ so that the CRNAs will gain a lot of experience thinking through these often challenging situations.”

**Experience Pays Off**

Ryder Trauma Center at Jackson Memorial Hospital is a busy trauma center that treats more than 4,000 trauma patients annually, which optimizes the FRST’s trauma exposure. “We use the team model and everybody has a job,” explain Wilson. “Anesthesia is at the head of the bed assessing the patient’s consciousness and airway. One medic is responsible for the IV access. Another medic is taking the patient’s blood pressure and vital signs. The nurse is overseeing the patient and administering any needed medications or blood. Lastly, someone has been identified to cut the patient’s clothes off. Everyone has a very specific job, and we rehearse this with each and every patient the team is accountable for at the trauma center. This allows them the opportunity to work together as a team, refining that process because ultimately when the team is deployed we want them to be able to work collaboratively, efficiently, and effectively for the betterment of their patients.”

The Army Training Detachment normally hosts one team each month for training. Occasionally, a team will get called up on short notice and ask if the training center can accommodate them before they are deployed, which they will do. There is one month during the year where the training center does not accept a team for training; that is when the staff will review their curriculum and make any necessary changes, as well as obtain medical maintenance for all of their equipment.

Like everyone at ATTD, LTC John Wilson has deployed numerous times. His deployments include service in Iraq, Afghanistan and Africa. “Having many deployments, I’ve learned a few things along the way and I try to instill those lessons learned to the CRNAs who come through here.” He deployed to Iraq just before he joined the staff at ATTD so he would have recent deployment experience to share with his trainees. “It also gave me the ability to have first-hand knowledge of current med-evac platforms, blood and resource availability, as well as how patients were being evacuated,” reflects Wilson. “Although I just came to the trauma center in December 2017 and don’t have years and years of experience at the training center, I do have a lot of deployment experience to draw from that can be used as added benefit for the providers we are training here in Miami.”

Wilson adds that on the clinical side of the equation he can help the CRNAs consider other real-world possibilities, such as managing a canine patient. “I’m not a veterinarian, and I don’t claim to be, but in many cases, the teams who are going out and putting their lives on the line work in collaboration with military working dogs,” says Wilson. “We treat military working dogs as soldiers. They actually outrank their handlers, and there are agreements that working dogs are cared for as U.S. soldiers in a medical facility.”

—Continues on page 22
CRNAs are, in many ways, responsible for the management of these animals and may need to put in an endotracheal tube or start an IV. These are unique skills that military CRNAs have, that other CRNAs don’t, and it has some unique challenges.” Although veterinary support is available via telephone consultation, the FRST providers are typically the ones who initiate canine care and resuscitation prior to evacuation to a veterinarian.

Wilson also makes sure to instill the thought process of having a Plan B for all scenarios. He advises, “Don’t always count on having power and electricity and all the luxuries you have in a nice OR in the States. You may be in a situation where you may need to use a headlamp around your neck. You don’t have the ability to use bright light. You may not have power because your generator may not be working properly, and therefore, your anesthesia machine isn’t available, but you still need to be able to take care of your patient.” Considerations should always be made for having a manual blood pressure cuff, battery-operated finger pulse oximeter, and Emergency Mainstream Analyzer (EMMA) available, anticipating a loss of power.

Being familiar with and training using total intravenous anesthesia (TIVA) also sets military CRNAs apart from civilian providers. “We advocate for TIVA use with our providers because using TIVA allows us flexibility when functioning in austere environments,” explains Wilson.

Lastly, Wilson advises the members of the team to have everything in order at home before they leave, which includes a good support network for the family members left to manage while they are deployed. “I do what I do because of some great American heroes who risk their lives on the front lines every day to protect our country. A lot of times, soldiers get most of the praise and gratitude for what they do, and rightfully so. However, there are a lot of spouses and kids at home that are also in it with the soldier. We, as soldiers, appreciate when our families are taken care of when we’re deployed as well.”

Continued from page 21