Special Focus
PREPARED FOR ANYTHING
Gearing up for active shooter, tactical & high-threat incidents, p. 19
TIME IS BLOOD
Learning the right way to perform hemorrhage control
By A.J. Heightman, MPA, EMT-P

There are many ways that I’ve watched patients die during my 45 years in EMS. Some are due to rapidly deteriorating medical emergencies such as congestive heart failure, asphyxia, myocardial infarctions, ruptured aortic aneurisms or pulmonary embolisms.

But the most unforgettable deaths have been trauma-related, where I had little or no control over the situation: gunshot wounds, stab wounds, penetrating wounds, crush injuries, amputations and severe burns.

There’s a significant difference between seeing someone who has already died from blood loss and watching them slip away in front of your eyes.

I’ve experienced patients who succumbed to their traumatic injuries and classified them into two categories: those in extreme pain, with massive injuries, who slip away with agonizing pleas for help, and those who are rather calm and seem to just slip away silently. I’ve had more nightmares about the latter.

One call in particular involved a male patient who fell onto broken glass from an industrial garage door window. He spoke to me all the way to the hospital and told me he felt he was going to die. I tried to convince him that he wasn’t, but he had that look that told me otherwise.

As we neared the hospital, his eyes closed on his ashen face, his rapid breathing slowed to quiet puffs, and he passed away. We started CPR, of course, but he didn’t survive.

At the time, the only care I could render (BLS) was to place large universal trauma dressings over the top of the wounds and give him oxygen. There were no IV/intravenous fluids, hemostatic dressings, tClamps or state-of-the-art occlusive dressings I could insert or cover the wounds with.

In hindsight, the stupid universal dressing I placed over his wound was like placing a towel over a leaking fire hose—all it did was soak up the precious blood he was losing.

Fortunately (or unfortunately), the war in Iraq and Afghanistan, as well as school shootings, terrorist attacks and lone wolf incidents, have forced us to rethink and retrain existing tactics, operations and rapid hemorrhage control techniques.

Some old salts tell me “it’s much ado about nothing,” because they haven’t lived through a Boston Marathon bombing, a multi-location series of calculated Paris-style attacks, a San Bernardino massacre, or a Columbine or Sandy Hook type of school incident. But, unfortunately, many of us have been, or will be, called upon to care for people in extremis, when blood is flowing from their bodies like Kool-Aid.

EMS crews at REMSA were confronted with 15 traumatic amputations immediately after a small plane crashed and slid into the stands at the Reno (Nev.) Air Show. Those “seasoned warriors” are now carrying multiple tourniquets—on their belts and in their rigs.

We have to become better prepared than we’ve been in the past.

This month’s issue represents the JEMS editorial team’s latest efforts to prepare you for active and dynamic threats, as well as high blood flow wounds and large-scale mass casualty incidents.

We can’t cover all aspects in one issue of JEMS, but we’ve done our best to focus on several key areas and initiatives. Countless lives could be saved by teaching important tips and tricks to stop patients from exsanguination and dying in your arms or ambulances.

After the Sandy Hook Elementary School massacre, military, law enforcement, medical/trauma and civilian experts that convened in Hartford, Conn., pointed out a major deficiency in civilian wound care. They noted that we weren’t carrying or applying tourniquets in the right place, in the right manner, in the right situations or early enough to stem massive bleeding.
They also pointed out hesitancy by untrained responders when applying and releasing tourniquets during early triage as a stopgap measure, to control bleeding and reduce the pressure and pain caused by the tightened band. Most responders have been incorrectly taught that, “once you apply a tourniquet, you can’t release it.” What a bunch of bull droppings! We apply and release a tourniquet every time we apply a blood pressure cuff!

Experts also noted that civilian emergency responders were never taught (or permitted) to perform wound packing, a technique performed in EDs every day by inserting hemostatic or regular gauze deep into a wound, in a finger-over-finger pushing/packing manner, until the patient’s volcano of precious blood stops erupting.

Wound packing is a procedure that used to be limited to EDs, like intubation and continuous positive airway pressure. Well, that’s all changing now, and wound packing will soon become a high priority in civilian hemorrhage control classes. As with the use of occlusive dressings and tourniquets, we now know, and accept, that packing the wound of someone with an inguinal tear or deep penetrating injury is the only thing that will keep them alive long enough to reach the cold steel of a trauma center.

The JEMS team works in San Diego, one of the leading training grounds for the Navy SEALs. We’ve been able to attend many training sessions and conduct photo shoots at what I consider to be one of the greatest “toy stores” in the world—Strategic Operations Inc., a former movie studio.

The owner, Stu Segal, has converted his movie lot and facilities into a massive training center where EMS personnel, tactical medics, special forces and others take Tactical Combat Casualty Care (TCCC) training. They learn to conduct proper assaults, room searches, enemy/assailant takedowns and, most importantly, the best medical practices known to exist today.

Our editorial team incorporated some of these important concepts and educators into a special dynamic and active threats section.

Jeffrey S. Cain, MD, FACEP, an EMS physician, SWAT team medical director and combat physician with 16 years of military service, including multiple combat rotations with 1st Ranger Battalion, teamed up with Jonathan Wilson, a former special forces medical sergeant and member of 3rd Special Forces Group (2006–2010) with multiple combat rotations to Afghanistan, to present proper tourniquet application procedures to you.

Cain isn’t just an experienced EMS and military physician—he also serves on the boards of the Committee on TCCC (CoTCCC), the Committee for Tactical Emergency Casualty Care (C-TECC), and the Defense Health Board Trauma and Injury Subcommittee.

I emphasize the word “proper” because we all recognize that most public safety educators have had little or no field experience with tourniquets. We wanted to get combat physicians and operators who’ve applied dozens of tourniquets, under the most austere conditions, to present this important material to you.

I’ve also teamed up with Art Berain, border division coordinator of the California Highway Patrol, my son Joe, a trained tactical officer and the staff at Strategic Operations Inc., to illustrate proper application steps and important techniques to stem massive hemorrhage with your hand, fist, elbow and knee as you apply a tourniquet.

Please read the information presented in this entire issue carefully and pass it along to your friends and colleagues—the human body only holds six precious liters of blood and we have to stop the bleeding before our patients lapse into irreversible shock and die.

A close friend and trauma surgeon once looked me in the eye after critiquing my care of a severely injured trauma patient and said, “I want you to always remember that, if you screw around and don’t do the right things rapidly, all bleeding will eventually stop!”

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