CASE STUDY

Protocol Forum

TCCC: WHAT'S IN THIS FOR ME?

A civilian case for the relevance of Tactical Combat Casualty Care

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The crisis of today's global realities continue to challenge virtually every aspect of modern life. The violence directed at civilians, law enforcement and even emergency responders exposes a brutal threat that is no longer a distant headline from a foreign battlefield but a viable danger lurking in our own back yard. Consider the unsuspecting FDNY EMS crew which recently faced an active shooter while attempting to assist in a motor vehicle collision.* Many of America's elite emergency responders are beginning to actively evaluate and adopt the proven tactics, principles, techniques and equipment used by their military counterparts.The valuable lessons learned in the heat of battle apply not just to military strategies, but now share an urgent relevance on the homefront as the providers of pre-hospital medical care face the changing landscape of emergency medicine.

The tactical law enforcement community has already begun to recognize the need for a revolution in thinking when it comes to casualty care. Perhaps no other event in U.S. history better illustrates the parallels shared between the military and tactical law enforcement than the 1997 bank robbery in Northern Hollywood. As the drama unfolds, two men armed with military-style automatic weapons and body armor engage patrol and SWAT officers in a deadly firefight lasting more than an hour. When the smoke finally clears, the two suspects lie dead in the street with 15 additional people seriously wounded in the crossfire, 10 of which are fellow policemen. The bottom line is simply this: locations and missions may differ and resources may vary, but the challenges of addressing penetrating trauma while under hostile conditions remain the same.

Tactical Combat Casualty Care

The success of today's military's approach to casualty care is reflected in the unprecedented survival rate of soldiers wounded in Iraq and Afghanistan, remarkably higher than in any other conflict in U.S. history to date. In 2001, the Committee on Tactical Combat Casualty Care (COTCCC) was formed. Key members of the armed forces and leading trauma specialists from the civilian sector convened to develop enhanced methods of decreasing preventable death and to recommend the guidelines governing the management of combat casualties. Their conclusions were simple and direct. The resulting algorithm for trauma management in its simplest form boils down to a series of threefold protocols which actively build upon one another.

Addressing the Three Leading Causes of Preventable Death

Supported by a wealth of combat casualty data from the Vietnam conflict, exsanguination from extremity injury represents 60% of preventable deaths on the battlefield and is the leading hindrance to survival in the tactical arena. Tension pneumothorax, a result of acute torso trauma characterized by progressive respiratory distress, is the second leading cause of death, totaling 33% of fatalities attributed to potentially survivable injuries. Rounding out the top three is airway insult, which constitutes 6% of preventable combat death.

Executing the Correct Intervenions

Based on the top three causes of potentially survivable combat death previously discussed, the corresponding interventions align in the order of treatment priority.

Topping the list for managing life-threatening extremity hemorrhage is the temporary use of the tourniquet. Statistically, the appropriate and rapid application of this simple device is responsible for saving more service members' lives than any other piece of medical equipment, a conclusion recognized by the U.S. Army in the issuance of a C-A-T® tourniquet to every active soldier, medical and non-medical alike. For non-life threatening extremity hemorrhage, careful wound packing with gauze followed by the application of a circumferential pressure bandage is recommended. If the penetrating wound compromises the chest wall and thereby interferes with respiration, an occlusive chest seal followed by upright positioning of the casualty is advised.

The relief of tension pneumothorax stands next in line of priority for treatment in the field. Current articles published in Military Medicine and recent studies conducted by the Army's Institute of Surgical Research indicate that a 14-gauge, 3.25" needle performs this function best and is just as successful as the chest tube that retains the therapeutic benefits for at least four hours. The recommended procedure for tension pneumothorax begins with the insertion of the needle/catheter into the 2nd intercostal space, mid-clavicular line on the affected side and concludes with leaving the catheter in place after the removal the needle.

Finally the interventions addressing obstructed airway include chin-lift or jaw thrust maneuvers, the use of a nasopharyngeal airway, and semiprone recovery positioning of the casualty to prevent aspiration. Cricothyroidotomy is preferable to intubation in cases of penetrating wounds to the face or neck that prohibit good visualization of the vocal cords.

Implementing the Correct Interventions at the Proper Time

Three distinctive levels of casualty care constitute the unique continuum of casualty management in any tactical environment. Each intervention previously mentioned has a feasible "window of opportunity" when placed within the framework of these critical timelines.

Care under Fire is the stage when care is administered at the point of wounding while both the casualty and the rescuer are under effective fire. Limitations to equipment carried by the operator and possibly the medic severely restrict the interventions that can be executed at this particular time. With the exception of casualty extraction, the only other intervention possible is tourniquet application.

Tactical Field Care is the phase when care is given "behind cover", once effective fire is no longer an active threat. At this pre-evacuation juncture, the options for treatment expand but are still limited to equipment carried by mission personnel. If the right equipment is packed, all of the interventions mentioned above could be executed. The pre-evacuation time can vary from a few moments to several hours.

TACEVAC, aka Tactical Evacuation, is care administered while in transit to a pre-staged higher echelon of care, such as an aid station and/or combat support hospital. Personnel and equipment exponentially expand the treatment options during this phase of care.

In Conclusion

Healthcare providers may question the relevance of TCCC in a mainstream civilian setting, ie. what's in this for me? This important question should act as a springboard to ongoing discussions within the community of pre-hospital care providers at large. In the grand scheme of saving lives, there are many more similarities than there are differences. Emergency medicine and the American war effort have a long history of mutually benefiting one another. The next challenge of a critical medical intervention near you may likely benefit from the priceless lessons gleaned from the casualties of war.

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