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## Medical Tactics for Law Enforcement: Development of the Rochester, Minnesota, Police Department Basic Tactical Casualty Care (BTCC) Course

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*“Good medicine can sometimes be bad tactics and bad tactics can get everyone killed.”<sup>1</sup>*

As a consequence of the 1993 Battle of Mogadishu, dramatized in the movie *Black Hawk Down*, the U.S. military rethought its entire approach to tactical medicine and care under fire (CUF). Since the end of the Vietnam War era, the military has based its medical model of care upon dramatic advances in the civilian emergency medical services (EMS) sector. This system, while robust and capable for conventional prehospital medical and trauma needs, failed when faced with rendering aid while under direct fire. As a consequence of Mogadishu, a new paradigm in medical care was developed, termed Tactical Combat Casualty Care (TCCC).<sup>2</sup>

This new approach to combat trauma, which emphasizes that medical care is another tactical decision to be evaluated in the context of the threatening situation, continues to save lives in both Iraq and Afghanistan. This new concept of medical care is now taught to *all* combatants and not simply limited to medical personnel. Specific advanced skill sets are provided to nonmedical personnel termed combat lifesavers (CLSs). The U.S. military views this skill set as so mission critical that in 2007, the U.S. Army began training all soldiers in the CLS curriculum as part of basic training; only marksmanship and physical training currently receive more training time.<sup>3</sup> In addition, the entire Iraqi police force has been trained as CLSs.<sup>4</sup>

In contrast to standard medical assistance calls, medical care rendered by law enforcement during periods of active threat poses substantial risk of injury both to the victim and the responders. Additionally, there may be conflicting priorities confronting officers, including decisions concerning threat mitigation versus rendering aid. These conditions more closely mirror those faced in combat than those typically encountered outside the theater of operations, and therefore trained for, in civilian EMS. At present, no law enforcement-specific medical training exists to address the issue of medical care in the setting of active threat. As such, U.S. law enforcement is increasingly turning to the military experience to address this deficiency.

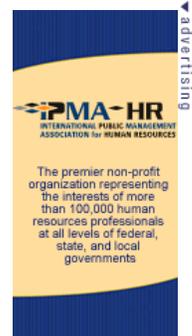
### Basic Tactical Casualty Care (BTCC) Course

A previous scenario-based study of medical care decisions by law enforcement officers while under active threat demonstrated the existence of a significant knowledge gap in tactical medical care.<sup>5</sup> Out of a maximum score of 38 points, the average score was 15.5, with a range of 7 to 25 points. Of the officers polled in the scenario-based study, 92 percent expressed a strong interest in participating in law enforcement-specific medical training.

To address this knowledge gap, a law enforcement-specific curriculum was developed for the Rochester, Minnesota, Police Department, based upon then-current military CLS guidelines. This military model was adapted to civilian needs and restrictions. The resultant training product was designated the BTCC course. Course components are listed in table 1. This curriculum was developed as an eight-hour course that could be completed in a single training evolution. The final course was submitted to and approved for continuing education credits by the Minnesota Peace Officer Standards and Training (MN POST) Board. Consistent with the

**Table 1: Initial BTCC Course Curriculum**

Module	Title	Time
Lecture 1	Introduction to TCCC	20 min
Lecture 2	Rapid Casualty Assessment	40 min
Practical 1	Rapid Casualty Assessment	45 min
Break		15 min
Lecture 3	Bleeding and Shock	30 min
Practical 2	Tourniquets	30 min
Lecture 4	Management of Chest Trauma	30 min
Practical 3	Chest Trauma	30 min
Lunch		60 min
Lecture 5	Tactical Airway Management	30 min



department's previous work, this course was designed to be modular and portable, to emphasize hands-on training and to be integrated into current departmental standard operating procedures. To emphasize hands-on training and rapid participant feedback, the number of participants was deliberately limited to 12, with a minimum of 2 instructors present for the entire course.

Lecture material was limited to essential information and provided at a basic medical level to enable rapid understanding and retention by all officers, regardless of level of medical sophistication. These lectures emphasized the concepts of TCCC, focusing upon the three phases of care: CUF, tactical field care (TFC), and tactical evacuation care (TEC). TCCC is not simply a medical skill package for the casualty care responder; it is a philosophy of applying medical skills in a high-threat environment. In contrast to conventional civilian care, TCCC reverses the order of the common "ABC" (airway, breathing, circulation) triad approach. Instead, the recognition and management of life-threatening bleeding (circulation) and chest trauma (breathing) over airway management. Given the need of officers to understand the role and timing of medical care when faced with an active threat, emphasis was placed upon the CUF phase (see table 2).

**Table 2: U.S. Military TCCC CUF Actions**

1. Medical decisions are limited.
2. Move to cover/return fire as required/directed.
  - a. Keep yourself from being shot.
  - b. Casualty should also return fire if able.
  - c. Try to keep casualty from sustaining additional wounds.
3. Casualty should attempt self-care if possible.
4. Stop major life-threatening bleeding.
  - a. Extremity: tourniquet
  - b. Nonextremity: pressure dressing
  - c. Ignore non-life-threatening bleeding
5. Defer airway management until the TFC stage.
6. Reassure the casualty.

BTCC stressed a simplified approach to rapid casualty assessment, emphasizing the concept of "sick" or "not sick." Sick casualties can be defined as requiring medical intervention within 15–20 minutes to prevent death. Rapid, accurate determination of a casualty's condition allows for improved tactical decision making, such as the need for immediate versus delayed extraction and evacuation. Conversely, failure to correctly identify a patient's condition may place both the casualty and the responders at unnecessary risk.

Practical application of the lecture skill set was undertaken using a crawl-walk-run approach. Initially, participants were introduced to methods of patient assessment under hazardous conditions, with an emphasis on remote assessment and directed self-aid. This period also enabled the participants to become comfortable with the close physical contact required for patient assessment in a sensory-deprived or overloaded environment, while attempting to maintain situational awareness. A rapid total-body patient assessment, the blood sweep, was introduced (see "Lessons Learned"). Once participants were comfortable with the fundamentals of patient assessment, they were exposed to practical sessions that focused on the correct and safe application of specific lifesaving interventions, including tourniquet application; management of chest trauma, including needle decompression for tension pneumothorax (TPX); and nasopharyngeal airway (NPA) placement.

The BTCC curriculum culminated in a series of practical, scenario-based exercises. The first was a trauma lane, requiring rapid assessment and treatment of multiple casualties (see table 3 and figure 1). This concept, pioneered by the military, provides individual students with a series of complex medical and tactical problems that they are forced to solve to the best of their abilities. To reinforce the BTCC didactic and practical training concepts, the trauma lane emphasized rapid patient assessment in a CUF phase and limited patient care to tourniquets, needle decompression, and NPA placement.

**Table 3: BTCC Trauma Lane Scenario**

After a violent takeover robbery, two suspects take a hostage and flee the scene. A pursuit is initiated and the suspects' car crashes. The suspects engage the first responding officers. Multiple officers are hit in the exchange, as are civilians. The injured officers call for help and state that the suspects appear to be down and are no longer shooting. You are the first officer to respond to the scene. Ground and helicopter EMS have been activated. You must quickly and safely assess all the injured.

Patient 1: Officer	Patient 2: Officer	Patient 3; Victim	Patient 4: Suspect	Patient 5: Suspect	Patient 6: Officer	Patient 7: Bystander child	Patient 8: Bystander mother
Cannot walk	Cannot walk	Cannot walk	Gunshot wound (GSW) to head not compatible with life, dead on arrival	Cannot walk	Injured leg	Crying for mommy	GSW to right arm, need tourniquet
Has radial pulse	Has radial pulse	Head injury	Cuff	GSW to right arm with heavy	Cannot walk	Nothing wrong	Heart rate fast, but has intact radial

			active bleeding		pulse
Will follow commands	Will not follow commands, appears confused	No radial pulse	GSW to right leg, minimal bleeding	Fast respiratory rate	No obvious injuries START category green (delayed care/can delay up to three hours)
Needs weapon secured	Bleeding from head	Is breathing spontaneously but with snoring respirations	Needs to be searched, has a hidden weapon	No radial pulse	START category green (delayed care/can delay up to three hours)
Needs tourniquet on left leg	Needs weapon secured	Has carotid pulse	Needs a tourniquet on right arm	On blood sweep, if feel under vest, will find blood	
Simple Triage and Rapid Treatment (START) category yellow (urgent care/can delay up to one hour)	START category red (immediate care/life-threatening)	Deformity to both legs	Cuff	Needs weapon secured	
		Will need NPA	Has a hidden weapon	Needle chest decompression	
		START category red (immediate care/life-threatening)	START category yellow (urgent care/can delay up to one hour)	START category red (immediate care/life-threatening)	

The final portion of the course brought groups of students together into ad hoc teams, during which they were forced to manage medical problems within the context of police department standard operating procedures. Three specific scenarios were run (see [table 4](#)).

**Lessons Learned**

Delivery of the practical portions of the course revealed some unexpected insights into law enforcement approaches to medical care and some pitfalls in curriculum development.

The first unexpected finding came during the practical portion of rapid casualty assessment. The blood sweep is a tactical medical technique for rapidly assessing the downed victim while maintaining a reasonable degree of situational awareness. Assessors will feel down a specified area of the casualty's body (the sweep) and then quickly glance at their own gloved hands for blood. Typically, the assessor will rapidly sweep each individual limb, torso (front and back, under vest), and head. The entire procedure can be done in seconds, with only limited loss of situational awareness while glancing at one's gloves. Depending on circumstances, the presence of blood can be felt through gloves, without taking one's eyes off of the surroundings.

**Figure 1: Trauma Lane**

This is a simple trauma lane using medical mannequins and CPR torsos. The first wounded officer is in the foreground. Patient 3, the injured civilian, is not included in this photo, but was positioned between Officer 2 and the two suspects. The trauma lane continues around the bank of lockers to the upper left of the photograph. Please note the discarded shotgun lying beside Suspect 1 (CPR torso to right of Suspect 2).



In performing blood sweeps during the practical portion of the course, officers tended to approach the exercise as a frisking procedure for contraband. They would perform a rapid pat down while maintaining situational awareness, but would never look at the casualty or at their gloves until after completion of the entire pat down. As such, when a small amount of simulated blood was encountered, such as might occur from a small caliber gunshot wound, officers would not necessarily know where on the casualty's body the blood originated, and, therefore, would not know the location of the injury. This pat-down approach appears to reflect the scripted training of law enforcement in assessing and securing suspects and appears to be a default comfort state for most officers when confronted with circumstances requiring hands-on contact. Future training will need to address and adapt to such scripting.

Participants felt that the trauma lane provided the most useful practical training in the least amount of time. In this scenario, a single officer was required to progress from patient to patient, assessing and managing as appropriate, and then moving onward (see table 3). Eight patients were encountered, including three officers and two suspects (see figure 1). There were no surprise elements in the scenario to trick the officers, and the suspects were clearly identified as the only threats in the scenario prior to the scenario going live. The exercise forced officers to prioritize medical care and rapidly diagnose and treat life-threatening medical conditions, while still assessing the tactical situation of an officer-involved shooting with two suspects present on scene. It also highlighted the knowledge gap between medical and tactical care.

The following noteworthy tactical decisions occurred during the trauma lane:

- Several officers made the decision to bypass the two suspects and proceed to the third injured officer. In so doing, they placed themselves in a position in which their backs were to both suspects, and all situational awareness was lost (see figure 1). Had there not been the high stress of confounding medical issues, it is presumable that all officers would have secured the suspects prior to any further action.
- The surviving suspect had a significant gunshot injury to his right upper extremity, requiring placement of a tourniquet. Despite the fact that this suspect had been involved in the shooting of three officers, the participants were hesitant to place handcuffs on the affected extremity, out of concern for causing further injury. This hesitancy could have left the officers at significant risk. Optimal scene safety, while not always possible, should nonetheless be a tactical priority, regardless of ongoing casualty care issues.
- Several officers rendered aid to the surviving suspect, but then made no effort to search the suspect, moving on to the next casualty. Although all officers made efforts to secure the obvious weapons, the handgun casually placed in the waistband of the suspect was not discovered (see figure 2).

These observations and other similar tactical lapses noted during these drills highlight problems with current firstresponder training for law enforcement. This training, designed for conventional medical care under safe conditions, does not account for circumstances of active threat that officers may encounter. Under high-stress conditions, individuals revert to the level of training with which they are most familiar and comfortable. As the trauma lane demonstrated, in stressful situations perceived as primarily medical, mental conflict resolution will likely favor medical training over sound tactical doctrine, leading to potentially catastrophic consequences.

These findings highlight the necessity for law enforcement-specific training, integrating medical and tactical decision making, ideally using a reality-based platform integrated into departmental use-of-force and tactical training. Subsequent refresher training does not need to be overly complex or disruptive. In fact, it optimally should allow for a seamless flow between tactical and medical processes. For example, at the range, consider the following exercise: initiate a range drill engaging a threat, and, once the threat is neutralized, move to a mannequin, place a tourniquet, and then move to another target and engage the threat. This simple drill not only reinforces the actions of transitioning from weapon to medical equipment, but, more importantly, it reinforces the tactical decision-making process of transitioning from threat engagement to medical care and then back to threat engagement as a dynamic and fluid process.

From a logistical standpoint, the trauma lane was scheduled for 60 minutes (see table 1). Because individualized directed supervision and feedback were offered, each officer went through the trauma lane and then a real-time walk-through with a critique and a debriefing. As a result, the process actually took approximately 180 minutes, with significant downtime for officers not engaged in the process. In the future, to prevent excessive downtime and limit course length, the department plans to stage three simultaneous trauma lanes, allowing more rapid throughput while still facilitating personalized training. The remaining officer downtime during the trauma lane could provide a period to eat lunch and discuss questions or concerns.

### Equipment

To maximally achieve the objectives of improved officer safety and survival, officers will need the appropriate medical equipment in addition to the training. In this time of economic uncertainty, any large capital expenditures will require careful analysis. However, the BTCC course was developed with fiscal responsibility in mind. It avoids high-cost flashy items, focusing instead on simple, proven methods that can be administered safely and effectively while under stress.

The most important piece of medical equipment is the tourniquet. Several modern, high-quality, combat-proven one-handed tourniquets are available for relatively nominal costs (approximately \$20 per unit). A more advanced medical kit, capable of taking full advantage of the CLS curriculum and containing gloves, 14-gauge angiocatheter needles and an NPA, can be assembled for approximately \$60, including a carrying pouch.

### Figure 2: Suspect 2

Photograph of Suspect 2 as encountered by officers. There exists a suggestion of a weapon in the waistband of the suspect on the right side. Weapon is clearly visible by simply lifting shirt and is detectable by performing either a quick frisk or blood sweep.



### Figure 3: Tactical Medical Kit

A medical kit capable of making the most of the BTCC curriculum can be easily and inexpensively assembled. Possible platforms for necessary

Commercially available medical pouches of different sizes exist, depending on officer needs (for example, tactical versus patrol officer). Alternatively, current flash-bang cases are an ideal size to carry equipment (see figure 3). The most important consideration in selecting a medical pouch is providing the officer with the means of having lifesaving equipment immediately available when needed; a kit left behind in a patrol car because of size or weight concerns does not help anyone.

Care should be taken when evaluating and purchasing off-the-shelf medical kits, which frequently are expensive and contain higher cost but less-proven items (for example, hemostatic products rather than tourniquets).



#### Areas for Future Development and Investigation

The BTCC course is based upon current military combat lifesaver curriculum. Data from the Global War on Terror demonstrate that this training saves lives. It has proven so successful that it has been adopted as a standard of care by multiple coalition forces, including the Iraqi National Police.<sup>6</sup> That said, the BTCC course extrapolates military casualty data to the civilian setting. While the concept of tactical medical decision making remains sound, there is insufficient law enforcement data to determine whether this training truly meets all law enforcement needs. The authors believe that, understanding its potential limitations, these data are a reasonable starting point, which hopefully will develop and grow over the next few years. If nothing else, TCCC and BTCC provide an important officer mind-set for CUF.

In much the same way that the TCCC continues to evolve, the BTCC course also continues to evolve, driven by law enforcement-specific data.<sup>7</sup> As the causes of peace officer injury and death are becoming better understood, the course has been modified to further emphasize hemorrhage control (including the use of commercial and field-expedient tourniquets) and has added high-risk casualty extraction and casualty evacuation. The lecture portion of the course has been further decreased, with increasing emphasis based upon scenario-based training.

#### Conclusions

The most important lesson learned from this experience is that a modular, law enforcement-specific course can be developed and delivered without expending significant resources. The course was adapted from available military information. While much time and effort was required to develop a law enforcement-appropriate curriculum, it was certainly within the means of those involved, and the authors would be happy to make it available to other departments interested in such a curriculum. Other than overtime costs for personnel participating in the training course, the only expenses were the costs for copying the manuals and a nominal expense of approximately \$20 to purchase clothes for the medical mannequins at a thrift store.

The Rochester, Minnesota, Police Department benefitted from the services of a volunteer physician who expressed an interest in developing this course for officer safety and survival and who spent the time to develop the curriculum. Not every department may have immediate access to a physician or physicians willing to commit to such an endeavor and provide ongoing training and certification. However, many physicians seek ways of giving back to the communities in which they live and work. The IACP Police Physicians Section, the American College of Emergency Physicians Tactical Emergency Medicine Section, the National Association of EMS Physicians, and local military facilities and hospitals may serve as initial points of contact for locating interested and qualified medical personnel.

Although clichéd, knowledge is power, and empowerment improves self-worth and morale. In a previous study, 92 percent of officers expressed a desire for law enforcement-specific medical training.<sup>8</sup> Departmental morale can be effectively improved by increasing officer capability to respond to situations they feel are critical to survival. As a result, this training provides police chiefs with the ability to improve not only community preparedness, but also departmental morale, all in a cost-effective package. ■

#### Notes:

- <sup>1</sup>Frank K. Butler Jr., "Tactical Medicine Training for SEAL Mission Commanders," *Military Medicine* 166 (July 2001): 625-631.
- <sup>2</sup>Frank K. Butler Jr., John Haymann, E. George Butler, "Tactical Combat Casualty Care in Special Operations," *Military Medicine* 161 supplement (1996): 3-16, <http://emprs.org/tcccspecops1996.pdf> (accessed November 4, 2010); and Norman E. McSwain Jr., Jeffrey P. Salomone, and Peter T. Pons, eds., *Prehospital Life Support, Military Edition*, 5th edition (St. Louis, Mo.: Mosby Elsevier, 2005), 374-408.
- <sup>3</sup>Michael Felberbaum, "Army Adds Combat Lifesaver Course in Boot Camp," *Associated Press*, June 4, 2007.
- <sup>4</sup>Andrew Tilghman, "Iraqi Police Study the Basics of Medical Aid," *Stars and Stripes* 10 (April 2006).
- <sup>5</sup>Matthew D. Sztajnkrycer, David W. Callaway, and Amado A. Baez, "Police Officer Response to the Injured Officer: A Survey-Based Analysis of Medical Care Decisions," *Prehospital and Disaster Medicine* 22, no. 4 (2007): 335-341, [http://pdm.medicine.wisc.edu/Volume\\_22/issue\\_4/sztajnkrycer.pdf](http://pdm.medicine.wisc.edu/Volume_22/issue_4/sztajnkrycer.pdf) (accessed November 4, 2010).
- <sup>6</sup>Tilghman, "Iraqi Police Study the Basics of Medical Aid."
- <sup>7</sup>Matthew D. Sztajnkrycer, "Learning from Tragedy: Preventing Officer Deaths with Medical Interventions," *The Tactical Edge* (Winter 2010): 55-58.
- <sup>8</sup>Sztajnkrycer, Callaway, and Baez, "Police Officer Response to the Injured Officer," 336.

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