Title: 2014 Officer Safety: The First Five Minutes

Lesson Purpose: To give officers the training necessary to sustain themselves or

other officers in life-threatening medical emergencies.

Training Objectives: At the end of this block of instruction, the participant will be

able to achieve the following objectives in accordance with the

information presented during the instructional period:

1. Recognize steps officers can take to survive a

potentially lethal wound.

2. Discuss means of self-extraction from a position of

danger to protective cover.

3. Identify critical information that should be

communicated to the responding personnel.

4. Demonstrate the ability to apply a tourniquet and control a severe hemorrhage in a practical skills

session, to include basic movement techniques.

Hours/Credits: Four (4)

Instructional Method: Lecture/Conference/Discussion

Practical Application

Materials Required: Lesson Plan

Pen/Pencil/Paper

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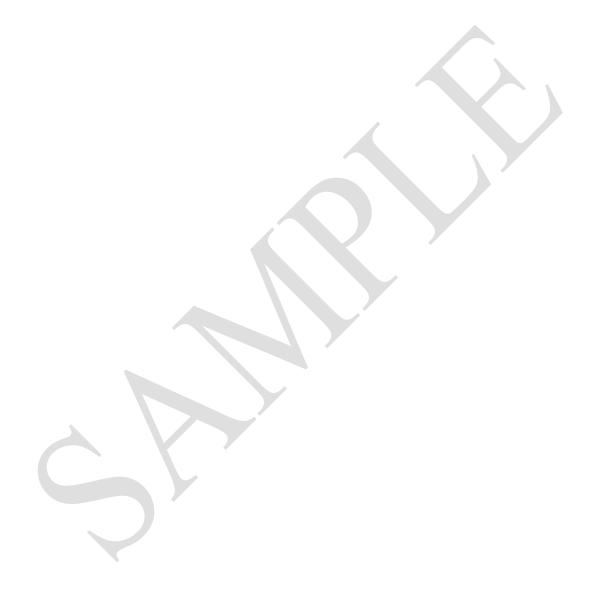
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Prepared By: John E. Combs

Instructor/Coordinator

North Carolina Justice Academy

Date Prepared: May 2013



Acknowledgements

The following medical professionals are medical professionals highly educated and experienced in the area of tactical medicine for law enforcement operations. They continue to graciously devote their time and expertise to the development, improvement, and on-going review and revision of this curriculum and are dedicated to saving the lives of law enforcement professionals. Their input and assistance have been invaluable to this curriculum, and all are assets to the North Carolina Justice Academy and to the law enforcement community as a whole. Again, thank you so much for your assistance, without which this curriculum would not have been possible.

Charles W. McKaraher, MD

Medical Director, Catawba County EMS Newton, North Carolina

Fabrice Czarnecki, MD, MA, MPH

Medical Director, Public Safety Medicine Northwestern Memorial Physicians Group

Chairman, Police Physicians Section
International Association of Chiefs of Police

Vice-Chair, Public Safety Medicine Section American College of Occupational and Environmental Medicine Title: 2014 Officer Safety: The First Five Minutes

I. Introduction

Note: *Disclaimer*: The information in this course is not intended to provide comprehensive medical training or to replace such training. Techniques and practices discussed in this course are subject to local regulation and control and should not override department policies and procedures. The course presents tactical medicine material that may conflict with conventional civilian emergency medical services (EMS) practices. Routine civilian EMS care is not designed to address care for victims in situations where rescue personnel are exposed to an ongoing threat of violence. This information is specially designed for law enforcement officers who will be the first responders to situations that require balancing both tactical and medical issues.¹

A. Opening Statement

"All police officers undergo some degree of formal emergency medical training as part of their education, typically at the United States Department of Transportation's First Responder level. This training, based upon traditional U.S. Basic Life Support (BLS) guidelines, is not law enforcement specific, and does not address medical care in the setting of an active threat." "In this post 9/11 era, development of law enforcement-specific medical training appears appropriate."

"What happens in the first five minutes of the police response is literally life or death for many involved in a major emergency. Triage and treatment of the wounded while establishing a safe scene . . . all at the same time." "While it is not practical for law enforcement agencies to employ paramedics to work in the field with officers, there is much that can be done to train police officers to care for themselves." "The primary goal now is to give officers the training necessary to sustain themselves or other officers in life-threatening medical emergencies." "Officers are reminded, they are police officers first and medical providers second."

B. Training Objectives

C. Reasons

"In contrast to the military Tactical Combat Casualty Care (TCCC) curriculum, no civilian law enforcement tactical medical program has received national recognition or widespread adoption. In fact, with the exception of a small number of programs directed towards medics providing support to law enforcement tactical teams, no widely available medical training exists for officers faced with these exigent circumstances." "Medical training for law enforcement remains largely limited to basic skill sets."

Note: In North Carolina, there are regulated medical acts and non-regulated medical acts. Examples of non-regulated medical acts would be tourniquet application and use of a hemostatic agent to control bleeding. Almost every other treatment is regulated. For example, needle decompression is a paramedic-level procedure, which requires medical training and medical control. Therefore, a law enforcement officer who is not also an EMT/ paramedic will be limited as to what they are able to do. – Charles W. McKaraher, M.D.

II. Body

A. Law Enforcement Medicine: Core Concepts

"Despite improvements in tactics and equipment, as well as a number of safety initiatives and programs, 2011 was a deadly year for law enforcement officers. According to the National Law Enforcement Memorial Fund, for the first time in 14 years, officers killed by firearms outnumbered deaths from traffic-related causes." "In its relative infancy, law enforcement medical support is an umbrella concept that encompasses preventive medicine (wellness programs and occupational medicine), self-aid/buddy-aid, first responder/first provider, and Tactical Emergency Medical Support (TEMS). Its purpose is to enhance officer and public safety, reduce departmental liability, and prevent or mitigate officer disability." "11

- 1. "The harsh reality of the situation is that we, as a profession, lack a solid grasp on the best practices for law enforcement medicine." 12
- 2. "Most law enforcement self-aid/buddy-aid programs, as well as most TEMS programs, are based upon the U.S. military's Tactical Combat Casualty Care (TCCC) system. Created to address shortcomings in military medicine brought to light during the Battle of the Black Sea in Mogadishu, Somalia, TCCC was designed for a military environment,"¹³ not law enforcement officers (LEOs).
- 3. "Military gunfights on the battlefield and law enforcement deadly force confrontations on the street may sometimes seem similar, but preliminary research indicates that the patterns of injury are not. TCCC has proven its worth in the combat setting, but in the civilian environment, it generates questions:
 - a) Are the treatment priorities of military wounds appropriate for LEOs?
 - b) Is the equipment fielded by military ideal for LEO injury?"¹⁴
 - c) This equipment is expensive and takes up weight and space on an officer's tactical vest or duty belt.¹⁵

- 4. "Currently, there is no single database that captures LEO injury data with sufficient detail. While never designed to address injury in detail, the Federal Bureau of Investigation's Law Enforcement Officers Killed and Assaulted (LEOKA) database has been used by some to try to extrapolate useful information.
- 5. Analyzing 10 years of LEOKA data from 1998 to 2007, Sztajnkrycer et al. attempted to identify 'preventable' causes of death; injuries where immediate intervention through self-aid/buddy-aid or by a tactical medic would have saved the officer's life.
 - a) Out of 341 line-of-duty deaths occurring within 1 hour of felonious assault, excluding blunt trauma (such as being beaten with fists, kicks, or a blunt object or weapon), the authors deemed 123 cases 'preventable.' [In other words, about 36% of deaths were preventable, which is very significant.]
 - b) Almost three-quarters of those were injury to the chest; this differs considerably from military data, where the most common preventable cause of death is injury to an arm or leg.
- 6. Another study, the International Association of Chiefs of Police (IACP's) *Reducing Officer Injuries: Developing Policy Responses* shows several different patterns of injury. This study, the first of its type, captured all injuries from a sample of eighteen law enforcement agencies from around the country. While there were no fatalities during the study period, two clear trends emerged:
 - a) First, that fitness and wellness play a large role in both injury rates and time to recovery, and;
 - b) Second, that nearly 18 percent of injuries sustained in confrontation placed the injured officer at risk for extremity hemorrhage.
- 7. Unfortunately, LEOs continued to be injured during training as well. In their analysis of the National Tactical Officers Association *Police Training Fatality Report*, Bollard and Metzger found an increase in the number of training-related deaths annually during 2008–2010."¹⁶ "The greatest number of deaths was due to medical causes, such as presumed myocardial infarction (heart attack) leading to collapse and cardiac arrest. Gunshots, motor vehicle crashes, and falls also remain significant causes of death.
- 8. There has been a recent surge of interest in medical training for law enforcement. While this interest originated among Special Weapons

- and Tactics (SWAT) and other branches of law enforcement special operations, every officer with public contact or the potential for conflict must be able to care for themselves or their partner until help arrives."¹⁷
- 9. "While Tactical Emergency Medical Support (TEMS) is geared towards specialized, high-risk units, recent active shooter events in Aurora, Colorado, and Tucson, Arizona, have demonstrated a clear need for every officer to be trained and well-versed in a number of life-saving techniques. Because of the unique environments in which LEOs operate, they cannot be dependent on traditional EMS and rescue to come to their aid." 18
- 10. "LEOs continue to be killed in training and in the line of duty. While there is not clear evidence that the military medical model is optimal, it can be assumed that medical intervention as soon as possible will mitigate complications of injury and reduce officer deaths." ¹⁹
- 11. "Law enforcement must turn a critical eye toward medical information LEOs have been taught in the past, what they are being taught now, and what effect this might have had on saving lives. This scope should be inclusive of all medical risks faced by law enforcement, not just felonious assault but also blunt trauma (that is, injury from motor vehicle crashes or falls) and complications of heart disease."²⁰
- 12. Chiefs of police, agency heads, directors "and other administrative officials will need to understand how to integrate medical training into their departments, and ensure that officers are provided with appropriate equipment that functions in today's environment of severely restricted budgets."²¹ They "will need to pass on this information in a practical, accessible format."²²
- 13. "Providing a knowledge base is not simply enough. The best methods for teaching and retaining that knowledge must be ascertained and integrated into LEO practice. A one-time block during basic/recruit training will not be sufficient. Ongoing (at least annually) training and familiarization with acute interventions likely will be necessary."²³
- 14. "Police officers are not going to replace the emergency medical providers in their communities. Instead, they should be equipped with basic medical skills that can be used to save their own lives and those of another injured or ill officer. An added benefit would be that these skills could be applied to assist an injured bystander or suspect. Such training should not distract the officer from other critical training, but should be complementary. Any medical equipment carried by an officer must be affordable, easy to use, effective, and must not interfere with performance of their day-to-day duties."²⁴

B. Battlefield Deaths

- 1. "Importantly, the pre-hospital phase of caring for combat casualties continues to be critical, since up to 90% of combat deaths occur on the battlefield before the casualty ever reaches a medical treatment facility."²⁵
- 2. The hemorrhage that takes place when a main artery is divided is usually so rapid and so copious that the wounded officer dies before help arrives.
- 3. If you can apply a tourniquet and control a severe hemorrhage, insert a nasal airway, and place an occlusive dressing on chest injuries, you can prevent most battlefield deaths.
- 4. "Trauma is the leading killer of Americans from one to 44 years of age. There are 18 deaths per hour from traumatic injury."²⁶
- 5. "The U.S. military has determined the major causes of preventable death on the battlefield are hemorrhage from extremity wounds, tension pneumothorax [an abnormal collection of air or gas in the pleural space that separates the lung from the chest wall], and airway problems."²⁷

C. The Basics

"Trauma is generally divided into <u>penetrating</u> or <u>blunt trauma</u>. Penetrating trauma refers to gunshot wounds, stab wounds, and injury from projectiles. Blunt trauma can include assaults, motor vehicle accidents, falls, explosions, and other force mechanisms." ²⁸ "Whatever the cause of trauma, there are a few basic rules to remember. An easy way to remember the approach to an injured patient" in the "hot zone" is C-A-B; Circulation (hemorrhage control), Airway, Breathing.

1. Circulation

Means "assessing the pulse at the wrist, neck, or groin and getting a blood pressure if you have a blood pressure (BP) cuff. If you can feel a pulse at the carotid artery, it means the blood pressure is at least 60."³⁰

a) "The main principle of field trauma care for the "lay" person is to stop ongoing blood loss. Applying direct pressure on a bleeding wound is the most effective technique. This simple maneuver will almost always stop the bleeding.

b) The average adult male has 5 liters of blood in the body. Typically, blood pressure begins to drop (hypotension) when 20-30% is lost. Death can occur when 40% of blood loss occurs and the volume is not replaced."³¹

2. Airway

"Refers to the victim's mouth and breathing passage. In an unconscious patient, the tongue is the most common cause of obstruction of the airway. Simply positioning the victim can allow them to breathe. A clear breathing passage is vital because [...] the victim's heart will eventually stop beating without oxygen."³²

3. Breathing

Means, "is the patient actively breathing and is the chest rising and falling symmetrically with each breath? For example, if someone is stabbed in the chest and one side of their chest has no breath sounds and does not rise and fall, there is usually a serious problem such as a lung collapse." ³³

4. This mnemonic is also sometimes referred to as "Call-A-CAB-'N-Go." For an emergency situation, this means to <u>call</u> for help, <u>abolish</u> the threat, C-A-B, check <u>neurologic</u> signs (AVPU – alert/verbal/pain response/unresponsive), then <u>go</u> to the appropriate medical facility.

D. Stages of Care

"Factors such as enemy fire, medical equipment limitations, a widely variable evacuation time, tactical considerations, and the unique problems entailed in transporting wounded officers must all be addressed."³⁴

1. Care under fire

Care rendered at the scene of the injury while the officer(s) are still under fire. Very limited medical care should be attempted while the officer(s) are under fire. Suppression of fire and moving the officer to a safe position are major considerations at this point. Significant delays for a detailed examination or consummate treatment of all injuries are ill advised while under fire. Available medical equipment is limited to that carried by the individual officer(s).³⁵

a) Keeping the officer from sustaining additional injuries is the first major objective. Wounded officers who are unable to participate further in the engagement should lay flat and still if no cover is available, or move as quickly as possible if nearby cover is available. This can be done by running, crawling,

rolling, etc. If there is no cover and the officer is unable to move to find cover, he should remain motionless on the ground so as not to draw additional fire. If the officer is able to move to cover, they should do so. <u>In the "hot zone," the best medicine is superior firepower.</u> 36

- b) No immediate management of the airway should be anticipated at this time because of the need to move to cover as quickly as possible. Airway injuries typically play a minimal role and care should be deferred to "tactical field care" in the "warm zone." It is very important, however, to stop major bleeding as quickly as possible.³⁷
- c) If the officer needs to be moved, a tourniquet that can also be applied by the officer, and is the most reasonable initial choice to stop major bleeding. Although advanced trauma life-support protocols generally discourage the use of tourniquets, they are appropriate in this instance because direct pressure is hard to maintain during transport under fire. Ischemic (low blood supply) damage is rare if left in place for less than 1 hour, and tourniquets are often left in place for several hours during surgical procedures. In any event, it is better to accept the small risk of ischemic damage to the limb than to lose an officer to blood loss. **Officers are in grave danger while a tourniquet is being applied during this phase, and non-life threatening bleeding should be ignored until the "tactical field care" phase.** 38
- d) The recommended means to control major bleeding in a tactical environment while under fire is a rapidly applied tourniquet. This principle is supported by the wealth of Vietnam conflict combat casualty data indicating that exsanguinations (severe loss of blood) from extremity injuries represented the number one cause of preventable battlefield deaths.³⁹

"For many years, it was taught that a tourniquet was to be used only as a last resort. The assumption was that if a tourniquet was applied, the victim would be forced to have an amputation. In the past few years, it has been determined that this is not true. Tourniquets are used electively in various types of surgery, and it is known that the blood flow to a limb can be stopped for several hours (probably up to four hours, depending on circumstances), without any permanent tissue damage. [...] The most important aspect of improvising a tourniquet is to use a material 1-2 inches wide, if possible. Recent studies have shown that a tourniquet 1-2 inches in

width will be most effective in compressing the tissue, without cutting it."⁴⁰

Direct pressure and compression dressings are less desirable than tourniquets in this setting because their application at the site of injury may result in delays getting the officer and the rescuer to cover, and they may provide poorer control of hemorrhage while the officer is being moved.⁴¹

"In recent experience by the Israeli Defense Force (IDF), the use of tourniquets in combat settings confirmed that they are effective and safe even when their use is prompted by tactical rather than clinical indications."

Note: "Over 2,500 deaths occurred in Vietnam secondary to hemorrhage from extremity wounds. These casualties had no other injuries."

The Combat Application (or CAT) Tourniquet® is one tourniquet of choice as it controls bleeding, is easy to use, and lightweight. In a 2005 study by Walters, et al. "the Combat Application Tourniquet, the Emergency & Military Tourniquet, and the Special Operations Forces Tactical Tourniquet were all found to be 100% effective in elimination of distal arterial pulse in both the arm and the leg in all subjects."

- (1) Tourniquet application
 - (a) Apply without delay for life-threatening bleeding in "care under fire" phase
 - (b) Apply 2-3 inches above bleeding site
 - (c) Tighten it until bleeding stops
 - (d) Note time of application
 - (e) Periodically check to make sure bleeding doesn't restart the officer may have to apply a second tourniquet (more proximal) if the first does not stop the flow adequately
- (2) Tourniquet practical
- (3) Management of gunshot wounds (GSW)⁴⁶

The basic treatment of gunshot wounds depends on the area(s) struck. Never underestimate the size and trajectory of a gunshot wound. Gunshot wounds, with

the exception of shotgun wounds, appear relatively small and unimpressive. However, the internal damage can be quite significant. In addition, never assume a bullet travels in a straight line. Generally, gunshot wounds should be covered by a dry dressing or a clear transparent dressing if available. Manual pressure should be applied if the wound is bleeding.

(a) For a penetrating GSW to the head

There is no real field treatment for this. Rapid transport is the key.

(b) For a GSW to the face/neck

Bleeding is often heavy and the airway can become obstructed. Direct pressure should be strong enough to stop the bleeding. The incidence of spinal cord injury caused by movement is exceedingly rare and, therefore, time should not be wasted with immobilization of the victim.

(c) With a GSW to the chest/back

The lungs, heart, and major blood vessels can be struck and typically can be fatal if not immediately treated. The officer may have trouble breathing as well. Sucking chest wounds occur when air is seen traveling in and out of a wound with each breath. Never completely occlude these sucking chest wounds as you can cause a build-up of pressure within the chest and cause a life-threatening tension pneumothorax. A three-sided tape technique with an occlusive dressing is indicated to manage these wounds.

- (d) For a GSW to the abdomen, manual pressure with a dry dressing is indicated, but oftentimes it is difficult to compress the internal bleeding source. This is why it is important to transport to a trauma center ASAP.
- (e) Arm or leg gunshot wounds can bleed heavily if a blood vessel is struck. Direct manual pressure is indicated to initially control bleeding. Tourniquets, as described above, may

sometimes be needed. Typically, direct pressure is almost always enough.

e) Although the civilian standard of care is to immobilize the spinal column prior to moving a patient with injuries that might have resulted in damage to the spine, this practice needs to be re-evaluated in the combat setting. Arishita et al. concluded the potential hazards to both patients and provider outweighed the potential benefit of immobilization. They further found that only 1.4% of patients with penetrating neck injuries in Vietnam might have benefited from cervical immobilization. Hostile fire poses a much more significant threat in this setting. However, other types of trauma resulting in neck pain or unconsciousness should be treated with spinal immobilization unless the danger of hostile fire constitutes a greater risk.⁴⁷

Following are some key points of "care under fire": 48

- (1) Responding officers should return fire as directed or required.
- (2) The wounded officer(s) should also continue to return fire if able, and relay their location and the location and number of suspects to communications as quickly as possible.
- (3) Move to cover as quickly as possible and by any means of movement that the responding and wounded officer can manage.
- (4) Try to keep the officer from sustaining any additional wounds.
- (5) Airway management is generally best deferred until the "tactical field care" phase.
- (6) Stop any life-threatening extremity hemorrhage with a tourniquet.
- (7) Relay to communications any relevant information.
- 2. "Tactical field care" is the care rendered while no longer under fire ("warm zone"). It also applies to situations in which an injury has occurred, but there has been no hostile fire. Available medical equipment is still limited to that carried into the field. Time to evacuation may vary considerably.⁴⁹

a) Tactical field care phase

The tactical field care phase is distinguished from the care under fire phase by more time with which to render care, and a reduced level of hazard from hostile fire, with the amount of time available being quite variable. The need to avoid undertaking nonessential diagnostic and therapeutic measures will be critical in such cases.⁵⁰

b) Initial evaluation

- (1) Should be directed to evaluation of circulation, airway, and breathing. There should be no attempt at airway intervention if the officer is conscious and breathing well on his own. Officers may want to place the wounded officer in the "recovery position."⁵¹
- (2) "When there is a concern of an associated neck injury, the injured person's nose, mouth, and belly button should be kept in the same line."⁵²
- (3) If the officer is unconscious, the cause will likely be hemorrhagic shock or penetrating head trauma. The airway should be opened with a chin-lift or jaw-thrust maneuver without worrying about cervical spine immobilization as previously noted. In addition, any officer in an altered state of consciousness should be disarmed.⁵³

c) Responding officer(s)

- (1) The responding officer(s) should "address any significant bleeding sites not previously controlled [. . .]
- (2) Only the absolute minimum of clothing and body armor to expose and treat injuries should be removed, both because of time constraints and the need to protect the officer against the environment.
- (3) Significant bleeding from an extremity artery or major vessel should be stopped as quickly as possible, using a tourniquet without hesitation as previously described. Otherwise, direct pressure with pressure dressings, hemostatic agents, and gauze to control bleeding should be used."⁵⁴
- 3. Movement of wounded officers⁵⁵

Usually, the best first step in saving a wounded officer is to control the tactical situation. Officers who are able to should move to cover without assistance so as not to expose others to unnecessary risk. If an officer is unable to move and is unresponsive, then a rescue plan should be developed.

a) Determine the potential risk to the responding officers

Note: Information may be limited due to the injuries, etc.

b) Consider assets

What can responding officers provide in the way of cover fire, screening, shielding, and rescue-applicable equipment?

- c) Make sure everyone understands their role in the rescue and which movement technique is to be used; i.e., drag, carry, rope, stretcher, etc.
- d) If possible, let the wounded officer know what the plan is so that he can assist as much as possible by rolling to a certain position, attaching a drag line to web gear, identifying hazards, etc.
- e) Once the tactical situation is controlled or the wounded officer has been moved to cover, further movement should be easier. The wounded officer can be disarmed, if necessary, and essential gear distributed to other officers.
- f) If the officer can hold on to the rescuers, then each rescuing officer will have one arm free to fire a weapon or move obstacles. If the officer cannot hold on, then the rescuing officers can take turns holding the wounded officer.
- g) When moving a wounded officer long distances, tourniquets, dressings, splints, etc., should be checked periodically to assure they are intact.
- h) Wounded officers should be protected as much as possible from the elements (sun, rain, wind, cold, snow, blowing sand, and insects) during transport, and observed for signs of hypothermia, dehydration, and heat illness.
- i) Options for moving a wounded officer are:
 - (1) Two-rescuer drag

The fastest method for moving a wounded officer is dragging along the long axis of the body by two rescuers. It can be accomplished with the rescuers standing or crawling. The use of the officer's web gear, tactical vest, a drag line, poncho, clothing or improvised harness makes this method easier. However, holding the officer under the arms is all that is necessary.

(2) One-rescuer drag

Can be used for short distances, but is more difficult for the rescuer, is slower, and is less controlled. The great disadvantage of dragging is that the wounded officer is in contact with the ground, and this can cause additional injury in rough terrain.

(3) Fireman's carry

Can be used, but it may expose too much of the rescuer and the wounded officer to hostile fire, and is very exhausting for both. Otherwise, it can be used over rough terrain with potentially less injury from contact with the ground.

E. Equipment Review

- 1. "Patrol officers usually have to make decisions only about what they carry on their body or in their usual mode of transportation.
- 2. Lightness, compactness, and versatility are desirable attributes to look for when choosing items to carry."⁵⁶
- 3. "Most first responders want to be prepared for what they most commonly encounter and for those conditions where early treatment could really make a difference. These situations usually fall into five categories: problems with airways, breathing, circulation, wounds, or minor ailments.
- 4. The following is a list of items that officers can carry on their person or have immediately available in their mode of transportation. These items are presented as an example and are not to be construed as hard and fast recommendations."⁵⁷
 - a) "General

(1)

Flashlight

	(2)	Nitrile rubber gloves
	(3)	Antiseptic (alcohol, peroxide, iodine, etc.)
	(4)	Band-Aids
	(5)	Eye wash
	(6)	Pain medications (ibuprofen, acetaminophen, etc.)
	(7)	Hand wipes
b)	Airwa	y
	Nasop	haryngeal airway
c)	Breath	ing
	CPR n	nask
d)	Circula	ation
	(1)	Tourniquets
	(2)	Permanent marker
	(3)	Compression dressings
e)	Wounds	
	(1)	Trauma shears or scissors
	(2)	1 or 2-inch wide tape
	(3)	Gauze squares in various sizes
	(4)	Gauze rolls
	(5)	Simple splinting materials
	(6)	Cellophane wrap"58
Conclusion		

III.

A. Summary

The first few minutes following a critical incident and actions taken by the involved officer(s) and responding officers(s) can be the difference between life and death. During this block of instruction, we have discussed the importance of self-applied first aid and how to provide that care with limited resources. We also covered self-extraction and the importance of communicating critical information. Finally, we demonstrated the ability to apply a tourniquet to include basic movement techniques.

B. Questions

C. Closing Statement

"Additional training is necessary to train the modern law enforcement officer in the integration of first responder medical skills with the realities of tactical scenarios. Simply stated, 'Good medicine can sometimes be bad tactics and bad tactics can get everyone killed."

"While it is acceptable to have a bad day, it is unacceptable not to train, not to try and get better, not to use the resources available to make sure that what caused that bad day never happens to you again."

— Lt. Col. Dave Grossman

NOTES

¹ Emergency Trauma Care, Part II, #668, Training Key® (Alexandria,	VA:
International Association of Chiefs of Police, 2012), 1.	

² Matthew D. Sztajnkrycer and others. "Police Officer Response to the Injured Officer: A Survey-Based Analysis of Medical Care Decisions," *Prehospital and Disaster Medicine* 22 (July-August 2007): 335.

³ Ibid.

⁴ Tammy Kastre and David Kleinman, "The First Five Minutes," *Tactical Response*, July-August 2012, 28.

⁵ Ibid., 29.

⁶ Ibid.

⁷ Ibid., 30.

⁸ Sztajnkrycer and others, 335.

⁹ Ibid., 337.

¹⁰ Brian L. Springer and others, "Law Enforcement Medicine: Core Concepts from the IACP Police Physicians Section," *The Police Chief*, December 2012, 76.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid., 76-77.

¹⁷ Ibid., 77.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.	
²³ Ibid.	
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