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Tactical Emergency Medical Services: An Emerging Subspecialty of Emergency Medicine

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Law enforcement agencies are recognizing the need to have emergency medical care available at the scene of any incident involving tactical operations. The potentially volatile and dangerous atmosphere surrounding tactical operations is conducive to severe injury to officers, hostages, suspects, and bystanders. This mandates the immediate availability of basic and advanced life support services. However, a purely traditional approach to emergency medical services in the tactical environment may not be feasible and may expose prehospital personnel to greater danger. It also may disrupt the law enforcement mission. These factors mandate a different set of field assessment and treatment priorities. To meet these needs, selected prehospital personnel and emergency physicians train to work with and support special weapons and tactics teams.

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INTRODUCTION

For years, military special operations units have included medical support in their organizational structure. They have long recognized that this support, particularly as it relates to a covert or tactical operation, can enhance the probability of a successful mission. Today in our violent society, law enforcement agencies that deploy special operations units are realizing that they too need tactically trained emergency medical support.

Law enforcement special operations teams frequently are faced with organized opposing forces, barricaded suspects, and hostage situations that may involve terrorism and the use of military-type weapons. In addition, violent and suicidal suspects present a challenging management problem for law enforcement, especially during tactical operations.^{1,2}

The advent and evolution of special weapons and tactics (SWAT) units in civilian law enforcement has

created the need for a military-style emergency medical services (EMS) system that uses civilian-trained and certified prehospital care personnel whose services conform to local policy and procedure. It also requires that these personnel be as close to the site of injury as possible without disrupting tactical operations. EMS personnel must be aware of scene factors that affect traditional methods of delivering prehospital care. Some traditional civilian field medical priorities therefore must be modified.

The operation may be prolonged or extended, requiring patient assessment and care under fire. This could increase the morbidity and mortality of law enforcement officers, perpetrators, and innocent citizens and bystanders involved in the operation. In addition, special medical gear and personal protective equipment are needed for tactical operations.

Law enforcement can be a dangerous occupation. In 1992, 62 officers were killed nationwide,³ and 29,673 law enforcement officers received personal injuries as a result of felonious assaults while in the line of duty.⁴ Members of SWAT teams are at high risk for injury, sustaining a casualty rate of approximately 1.8 per 1,000 officer missions. Perpetrators are injured at the rate of 18.9 per 1,000 officer missions, and bystanders are injured at the rate of 3.2 per 1,000 officer missions.⁵

EMS systems in the United States were developed to respond to the care of patients in the community and under somewhat controlled conditions. EMS for law enforcement special operations is emerging as a result of new problems encountered in prehospital care in the tactical environment.

It is unsafe for emergency medical personnel to be brought into this complex and dangerous environment without proper training. In fact, current basic trauma life support protocol states they should not enter an area until there is no doubt that "the scene is safe."⁶ In addition, the policies of most police departments will not allow anyone other than law enforcement personnel into an unsecured area. In some situations, this means that even if tactically secure, the crime scene must first be cleared for evidence by forensics and detectives.^{7,8}

Physicians who provide medical control for prehospital care personnel in the tactical environment and who may provide medical care during such operations are faced with a new and different approach to the delivery of emergency medicine. Emergency medical care during a law enforcement special operation requires skills and special judgment not taught to emergency physicians during residency, just as it is not taught in the traditional emergency

medical technician (EMT)-paramedic curriculum. In addition to medical control and the delivery of emergency care, the tactically knowledgeable or proficient provider may serve an equally important function as the team preventive medicine officer.⁹

Therefore, to support a SWAT team and provide preventive medicine and emergency medical care, physicians and prehospital personnel require special skills and a unique body of knowledge.

SPECIAL WEAPONS AND TACTICS TEAMS

History and Organization The modern military has always included medical support within its organizational structure. Napoleon Bonaparte is generally recognized as having the first modern field medical evacuation system integrated into units engaged in combat. Thus, wounded soldiers in Bonaparte's army did not need to wait until the fighting was over before receiving evacuation and medical treatment. Later, during the Civil War, Clara Barton recognized that medical stabilization of a war victim before and during transport from the site of injury could be beneficial. Her call to "treat them where they lie" formed the basis for present-day field assessment and stabilization. These two beginnings provided the foundation for modern military and civilian prehospital care systems.

It is significant, however, that before 1966, few if any law enforcement agencies staffed specialized teams to deal with armed, barricaded suspects and other high-risk situations. These assignments generally were left to uniformed patrol officers, who usually were not prepared, trained, or equipped to resolve these situations.¹⁰

On August 1, 1966, an incident occurred that was to change forever law enforcement's involvement in this area. After killing his mother and wife the night before, Charles Whitman, from the clock tower at the University of Texas in Austin, killed 15 people (including an unborn baby) and wounded 31 others, some as far as two blocks away.¹¹

After learning of the tragedy in Austin, law enforcement administrations throughout the United States began to assess their own departmental capabilities to handle a similar incident. Most agreed that their departments were ill equipped to resolve such problems.

In addition, the 1960s were plagued with civil disorder and riots, many of which involved sniper fire directed at the police and civilian populations. Consequently, law enforcement administrators who had sufficient personnel favored implementation of specially trained tactical units. A number of such teams were formed during the latter part of 1966.

The Los Angeles Police Department and the Los Angeles County Sheriff's Department were among the first to organize full-time tactical units specifically trained to handle high-risk incidents, and were responsible for developing one of the basic models in Southern California and the United States.¹²

Military special operations teams have long been in evidence and have their origins in the US Office of Strategic Services and the British Special Air Service during World War II. This ultimately led to the birth of the Army Special Forces (77th Special Forces Group) in the 1950s. As a result of the evolution of US special operations teams, other specialized teams such as DELTA, America's elite counter-terrorist force, were formed.¹³

The emergence of terrorism resulted in the formation of other special operations groups worldwide. The Germans established a special unit within their border police, later presented to the world as GSG9, short for Grenzschutzgruppe-9. This came about as a result of the 1972 tragedy at the Olympic Village in Munich, Germany.¹⁴ The French formed the Groupe d'Intervention de la Gendarmerie Nationale. Many other nations have followed suit.

Whereas combat medics proved their worth in World War II, Korea, and Vietnam, the United States Navy's special operations team, the SEALs, has come to the realization that special warfare means special medicine and deploys medics specially trained to attend to the medical needs of their teams.

The US army and other special forces units also deploy physicians for this purpose. The US Air Force now deploys highly trained tactical medics known as pararescuemen with their Special Tactics Squadron. The Federal Bureau of Investigation also is concerned about the possibility of serious injury to team members and now adds an emergency medical contingent to their hostage rescue team.¹⁵

Unfortunately, most law enforcement SWAT teams have not been afforded this time-honored and accepted military practice. The Los Angeles County Sheriff's Department has deployed paramedics during special operations since the inception of the team.

In the past several years, other model SWAT teams in the United States have developed programs that operate with tactically trained paramedics, supported by SWAT-knowledgeable or trained emergency physicians.¹⁶

In 1989 and 1990, two conferences at the national level brought together representatives from the law enforcement community with knowledge or interest in tactical emergency medical support.^{16,17}

These two conferences were developed to discuss and exchange ideas and concepts on providing emergency

medical support to tactical teams. Although there were some variations, depending on the agency, the fundamental needs for emergency medical care in the hostile environment and overall objectives were the same.¹⁷

In addition, a national tactical medical data bank was implemented with the help of the National Tactical Officers Association. This association, which is composed of tactical military officers, law enforcement officers, sworn paramedics, and a few physicians, has for several years promoted the concept of making EMS available to SWAT teams.

In 1991, the first presentation and abstract addressing tactical emergency medical support was presented at the National Association of Emergency Medical Services Physicians meeting,¹⁸ with publication in *Prehospital and Disaster Medicine*.

On January 27, 1993, the Board of Directors of the California Chapter of the American College of Emergency Physicians formed the Subcommittee on Tactical Emergency Medicine. Its primary purpose was to promote the availability of emergency physicians for SWAT teams throughout California. A second purpose was to lobby for a similar section on a national level.

In March 1993, the first National SWAT Physicians Conference was held in Bethesda, Maryland. This conference was hosted by the Department of Defense and the Uniformed Services University of the Health Sciences (USUHS) School of Medicine, Division of Military and Emergency Medicine.

Structure, Purpose, and Mission A SWAT team is composed of highly trained officers, each of whom can assume varied responsibilities with a high degree of proficiency and expertise. The unit is prepared to assume full control of specific high-risk tactical situations, which by nature would be considered excessively dangerous or complex for conventional police officers. Practically speaking, the team is organized as both a crisis intervention and a rescue team with negotiation and assault capabilities.

The goal of the team is to accomplish its mission without injury or death resulting from the team's intervention. Foremost in the minds of team members is the preservation of life and safety of team members, hostages, bystanders, and victims.²

SWAT teams are found in most midsized and large law enforcement departments. In some areas, a number of small departments have banded together to form multiple, multijurisdictional or regional SWAT teams.^{19,20}

Regardless of the size of the department, SWAT team structures usually are similar, although some positions are referred to by different names. The composition of a tacti-

cal team will vary depending on the situation, but generally most of the following positions will be deployed.

The unit commander supervises the entire operation, usually from the command post. The team leader directs the team, the scout conducts reconnaissance, and the marksman (sniper) provides information, personnel security, and precision long-range threat neutralization. An observer assists and provides security for the sniper.

The pointman guides the team to deployment and is the lead person on entry. For less-than-lethal munitions and delivery of specified chemical agents, a gasman is deployed, along with the rearguard, who provides rear security for the team.

The SWAT team is composed of assault teams, which make initial contact with the suspect, and arrest teams, which support the assault team by taking suspects into physical custody. Rescue teams and backup teams stand by, ready to fill in where any other team might need assistance and provide additional tactical or medical support.

Medics Many agencies now recognize the need for competent emergency medical care at the scene of an incident involving SWAT intervention. To meet this need, some jurisdictions assign selected fire, rescue, and EMS personnel to law enforcement agencies to train and work with SWAT teams. This prehospital support can be provided through a range of options, from civilian EMTs to commissioned officers who are paramedics or physicians.²⁰

Like other elements of law enforcement, SWAT teams operate along a force continuum from nonlethal to lethal force. Some options along the continuum may result in injury or death.²¹ Negotiation teams, which may be assigned as an integral part of the SWAT team, work closely with SWAT and are trained in crisis negotiations that work to reduce the suspect's level of violence while working for a peaceful conclusion. The overwhelming majority of SWAT operations are resolved at the negotiations level.

OBJECTIVES OF A TACTICAL MEDICAL SECTION

Anyone who has ever experienced a true emergency understands the paramount importance of proper planning and preparation, and the seemingly endless "time lag" that occurs from the time of injury to the arrival of emergency aid.

Some prehospital care providers and emergency physicians who work in an EMS system that enables them to see and treat an abundance of penetrating trauma (ie, the "knife and gun club") have this expertise. However, most

trauma seen by prehospital care personnel, emergency physicians, and trauma surgeons is blunt trauma. The blast injuries and penetrating trauma that may be encountered during a tactical operation may not be the typical injuries seen by most EMS systems.

As law enforcement agencies become more involved in drug-related criminal activity, there is more contact between police and heavily armed felons. The availability of mind-altering substances, increased reliance on outpatient psychiatric services, increase in gang-related activity, and availability of assault-type weapons underscore the increased demand for delivery of emergency medical care on the home battlefield.¹⁶

At law enforcement special operations, tactical medical personnel are faced with highly complex problems. These include the potential of having to render emergency medical care under fire, or provide the rapid extrication of injured under hostile fire in an unsecured environment to relative safety to administer medical care or interface with civilian EMS personnel.

Other concerns include the gathering of medical intelligence and being able to provide the team commander with information about any pre-existing medical conditions or problems that the suspect or hostages may have.

This information is extremely useful to the commander and team leaders, who must decide what tactical options may be necessary and how they should be deployed.

In cases of multiple hostages, the team medical officer can plan for different types of treatment based on the information obtained. Examples are congestive heart failure, acute chest pain, diabetics, and pediatric cases.²² Arrangements then can be made with local hospitals and trauma centers to prepare for different types of patients.

From a legal standpoint, tactical medical personnel must be aware of the preservation and collection of evidence and be able to apply special law enforcement principles to the delivery of emergency medical care.^{7,8} In this way, the confidentiality and integrity of vital evidence can be preserved.

Suspects in custody can be protected more easily if they are transported in a designated ambulance accompanied by police officers. Also, because of the potential of becoming a hostage during an operation, medical personnel must be trained to deal with and survive such an encounter.

Toxic hazards are increasing as more tactical teams become involved in high-risk warrant service, drug interdiction, and clandestine drug laboratory raids. Special ammunition and suppressed weapons have been developed by and for the Drug Enforcement Administration

and other agencies to reduce the risk of igniting volatile liquids in drug laboratory raids.

The tactical medical officer should have a knowledge of aeromedical medicine and transport procedures. For years, aeromedical evacuation has proved to be beneficial in the civilian and military sector, and tactical law enforcement units are now incorporating air medical transport into their tactical emergency medical support programs.²³

Physicians assigned to or associated with a law enforcement tactical team can increase its capability, reduce the all-important liability factor, and improve public opinion. In addition, medical officers can provide team medical education, preventive medicine, and team health management on a routine basis. These have been afforded to military fighter pilots, military special operations teams, and professional athletic teams for years. By ensuring that each team member is medically and physically fit to participate, the potential for a successful operation is increased.²⁴

ROLE AND TRAINING OF TACTICAL EMERGENCY MEDICAL SUPPORT PERSONNEL

In the deployment of a tactical medical section, there are four important areas: resources, planning, training, and providing care.

Resources Resources are medical personnel, ranging from law enforcement officers with basic first aid training to qualified physicians, who provide care and medical control. Although residency-trained emergency physicians would be desirable on tactical teams, in actuality the physicians now involved are from a number of specialties.

No tactical team should operate without some form of medical support and an EMS preplan.²⁵ To do so can have disastrous consequences.

Tactical teams are presently faced with several choices. They must decide whether to train members from their tactical team to become EMTs or paramedics, to train civilian EMTs and paramedics to become members of or affiliated with their team, or to recruit physicians from the private sector. The number of hours required for classroom and clinical rotations to become a paramedic ranges from 700 to 1,000 hours and varies according to state law. In addition, there are minimum requirements for continuing education each year. This translates into a labor-intensive effort and tremendous financial burden for most law enforcement agencies. As a result, each agency must perform a cost/benefit analysis of its program.²⁶

It would be ludicrous to send law enforcement officers to medical school and then through an emergency

medicine residency or other program, but it is relatively easy to put a motivated, qualified physician through a basic law enforcement class to become a sworn commissioned police officer. Once this occurs, the physician enters a new dimension in the ability to support a law enforcement special operations unit. This is the exception, and nationally only a handful of physicians are also police officers.^{9,17}

Qualified physicians and base station directors, however, should become familiar with these new standards of emergency medical care.

Planning Planning is the gathering, synthesis, and use of intelligence to select the appropriate tactical options for a high-risk incident. The medical component of the plan is essential and must be an integral part of preplanning for potential hostile confrontations.²⁷⁻²⁹

The location of hospitals and trauma centers must be determined, along with direct and alternative routes to them. Planners must determine whether security can be maintained at the receiving facility and whether the trauma center has helipad capabilities.

Communication channels for medical support and hospital contact procedures must be established, including a direct hotline into the emergency department. Many mission briefings involve such other law enforcement agencies as the Federal Bureau of Investigation, Bureau of Alcohol, Tobacco and Firearms, and the Drug Enforcement Administration.

Due to the sensitive and confidential nature of the information presented during a law enforcement special operations briefing, noncommissioned individuals may not be present during these briefings. This may leave them uninformed of the potential risks and complications of the operation and unable to formulate an EMS preplan for the injuries and illnesses likely to occur.

The location of on-scene medical personnel and the location for patient transfer to, or interface with, civilian EMS must be addressed. Officials must determine whether the ambulance and prehospital care personnel will have access to the scene based on their assigned location. The provisions for medical transport may be determined by the nature of the operation. For example, if the delivery of a high-risk warrant service is in a remote area with the nearest trauma center one hour away by ground, a plan for aeromedical transport should be entertained.

Training Training involves time and money, but it also increases capability and decreases liability. When possible and cost-effective, all medical personnel, physicians and paramedics, should be trained to the highest level possible.^{9,30} For commissioned officers, this may include

tactical operations, fitness requirements, and weapons qualifications.

This training allows the medical support team to fully understand all aspects of law enforcement tactical operations and the roles and responsibilities of each team member. (A realistic understanding of the factors predisposing to injury or illness permits more intuitive medical care and a more astute index of suspicion.)

One of the fundamentals of a tactical team is the ability to anticipate and preplan for any possible outcome, including the so-called "worst-case scenario." Medical personnel operating in the tactical environment also must develop this skill. Training exercises should include simulating worst-case scenarios with unusual types of missions, conditions, and adverse outcomes.

Providing Care It is in this arena that emergency and trauma physicians can make a difference. The "scoop-and-run" theory alone is not sufficient when a tactical operation involves a clandestine drug laboratory in a remote desert location or in rugged mountainous terrain with the nearest trauma center hours away. Even with on-scene aeromedical evacuation, advanced life support may be necessary. A minimal amount of equipment is required to perform these life-and limb-saving procedures, and the tactical emergency physician or prehospital care provider can bring this equipment on call-outs in remote areas.

TACTICAL MEDICAL COMPETENCE

Medical competence in prehospital care is axiomatic. In tactical EMS activities, it becomes commandment. Prehospital personnel performing in usual circumstances generally can control the scene of an emergency to the extent that they can reduce distractions such as noise, exert some control over danger factors, call on other personnel for needed help, and illuminate the victim(s). These factors, especially the last, greatly aid in assessment and stabilization. Without the ability to see the patient, many prehospital providers may well be at a total loss without further training.

In the tactical environment, prehospital personnel have little or no control over distractions, cannot mitigate danger, have limited medical personnel resources available, and often cannot illuminate victims. Yet, it is still possible to perform an abbreviated assessment and provide treatment measures until the victim has been removed to a relatively safe location. The essential elements necessary to acquire this skill are medical competence and on-going field experience.

COUNTER NARCOTICS TACTICAL OPERATIONS MEDICAL SUPPORT PROGRAM

In Bethesda, Maryland, at the USUHS Medical School, is located the Counter Narcotics Tactical Operations Medical Support (CONTOMS) program, a cooperative effort among the Department of Defense, Department of the Interior, United States Park Police Special Forces Branch, and the USUHS.

Implemented in 1990, CONTOMS was designed to meet the need for specialized medical training to support tactical teams during law enforcement special operations. A similar program was in development by the National Tactical Officers Association in the mid to late 1980s. After discussion and sharing of information, the programs agreed to join forces and develop this new tactical emergency medical program jointly.

The basic program consists of a one-week, 58-hour module, known as the EMT-tactical. This course provides continuing medical education for prehospital care personnel who already have training at the EMT or higher level. Candidates for this training must be sponsored by a bona fide law enforcement agency.

Some topics covered in the EMT-tactical course include using medical skills that are appropriate in hostile and austere environments, and recognizing and treating unique wounding patterns resulting from deliberate interpersonal aggression. Other subjects presented include providing preventive medical care in sustained operations and applying special law enforcement principles to the delivery of medical care. The goal of the CONTOMS program is to offer a nationally standardized curriculum and certification process, along with quality assurance, to meet the needs of providers who operate as a part of a tactical law enforcement team. The program also maintains a data bank to guide educational efforts so that they meet the dynamic needs of the law enforcement and EMS communities.

A medical directors' course also is offered for physicians who provide medical control for prehospital personnel operating with tactical law enforcement units. This course details the rationale and scientific basis for modified standards and scope of practice in the tactical environment.

TEAM PHYSICIAN CONCEPT

A physician on-scene can provide a wealth of medical knowledge and guidance for paramedics assigned to the team. In the event that complications of injuries exceed paramedic protocols, there is no need for them to contact the base station hospital and risk mission security or delay

medical care. Having been familiarized or trained in tactical operations, the on-scene or base station physician has an understanding of the risk/benefit ratio of the operation.²⁶

Tactical operations can be prolonged, or occur during inclement weather conditions that put team members and the operation at risk. The on-scene emergency physician can foresee these risks and advise the commander and team leaders.^{31,32}

PREVENTIVE MEDICINE

The tactical medical officer of a special operations unit can bring to law enforcement the military-style preventive medicine concept. Team medical education is extremely important if the team is to operate with 100% efficiency. Diet and exercise programs can be recommended as needed, and team members' minor medical problems can be managed in house. Team health management through routine physical examinations ensures that all members are mentally and physically fit.³³ The incorporation of critical incidence stress debriefing programs is another important component of team health management. In addition, the physician can provide medical education and training to tactical operators in such relevant areas as wound ballistics and field wound management.^{34,35} The emergency physician's knowledge of the mechanisms of injury is important in the selection of mission-specific personal protective equipment such as goggles, helmets, and body armor.³⁶

SUMMARY

Tactical EMS is a term referring to nonmilitary EMS services that have been modified for the realities of the tactical environment. Physicians and certified prehospital personnel must be trained in tactical EMS to provide services for law enforcement agencies. Tactical EMS is emerging as a new sub-specialty with nationwide application in prehospital care.

As this field evolves, it will continue to address such areas as quality assurance, standardized certification for prehospital care providers and physicians, and research.

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Editor's note: An exemplary case of the application of tactical EMS during a law enforcement special operation was recently published in the winter edition of *The Tactical Edge* (Heiskell LE, Tang D: The Moreno Valley hostage incident [case study]. 1994;12:36-38).

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