

Successful Development and Implementation of a Tactical Emergency Medical Technician Training Program for United States Federal Agents

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Abbreviations:

BLS = basic life support
CCRC = Casualty Care Research Center
CONTOMS = Counter Narcotic Tactical
Operations Medical Support
DEA = Drug Enforcement Administration
EMS = emergency medical services
EMT = emergency medical technician
SAEMT = Special Agent Emergency
Medical Technician
SWAT = special weapons and tactics
TEMS = tactical emergency medical support
USUHS = Uniformed Services University of
the Health Sciences

Abstract

Introduction: The emerging need for tactical operations in law enforcement often places personnel involved at risk. Tactical operations often are carried out in environments in which access to emergency care is limited. With the war against terrorism expanding, special operations involving United States federal agents are occurring worldwide. Currently, there are very few tactical medicine curricula training traditional emergency medical services (EMS) providers to operate in these high-risk missions. Trainees in existing programs must have previous EMS experience, and are selected from a wide range of backgrounds. The goal of this study is to examine a Special Agent Emergency Medical Technician (SAEMT) training curriculum developed specifically for federal special agents with prior experience in tactical operations, but without previous medical training.

Methods: An analysis of the SAEMT Program given to federal agents of the Drug Enforcement Administration (DEA) in Quantico, Virginia between July 2000 and April 2002 was performed. The SAEMT curriculum provided enrolled agents 181.5 hours of training in tactical emergency topics, including medical mission planning, logistics, operations, evacuation, and weapons training. In addition, SAEMT concurrently provides emergency medical technician (EMT) training. All of the participants were DEA agents with no previous medical training. Upon completion of the course, all participants took the National Registry of EMT-Basic examination. Measured endpoints included course completion rate and performance on certifying examinations.

Results: Ninety-five agents were enrolled and successfully completed the SAEMT course between July 2000 and April 2002. Of the agents enrolled, 84 (88%) passed the National Registry of EMTs-Basic examination within two attempts.

Conclusion: The SAEMT Program provides basic emergency medical training to federal special agents with no previous medical experience. The design of this program provides a useful template to meet the expanding demand for tactical emergency medical personnel.

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Tactical	Medical
Zones of operation	Zones of care
Protective tactical equipment	Preventative medicine/ primary care
Light and sound discipline	Medicine across the barricade – remote assessment methodologies, care provision
Rapid insertion and extrication techniques	Medical threat assessment
Forensic evidence preservation	Sensory-deprived, sensory-overload physical examination
Weapons handling and render-safe techniques	Hazardous materials/ Hasty decontamination

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Table 1—Comparison of knowledge and skills required for tactical and medical personnel

Introduction

The events of 11 September 2001 served to heighten public awareness of an expanded need for tactical operations by law enforcement agencies. Tactical operations, involving Special Weapons and Tactics (SWAT) or other civilian, law enforcement, and/or special operations teams, are challenging, inherently unsafe activities with increased risk of morbidity and mortality for law enforcement officers, perpetrators, hostages, and bystanders. Injuries to SWAT team members occur at a rate of 33 injuries per 1,000 officer missions.¹ The fundamentally hostile, austere, and often remote environment in which tactical operations occur, places limitations on the provision of medical care by civilian providers. Conventional EMS systems do not adequately prepare their personnel for the unique environment of tactical operations.^{2,3} Tactical emergency medical support (TEMS) has evolved in response to the needs of law enforcement agencies for maintaining the health, welfare, and safety of special operations personnel, as well as providing a broad range of health- and mission-specific services.^{4,5}

The Drug Enforcement Administration's (DEA) Mobile Enforcement Teams and Regional Enforcement Teams carry out numerous tactical missions in their role of interdicting illegal drugs and narcotics, and therefore, have a demand for personnel with these specialized skills. Agents often are faced with threats, including armed suspects, barricade situations, booby traps, and exposure to hazardous substances found in drug laboratories. These operations inherently are dangerous and often are conducted in remote locations. This program was created when DEA supervisors instituted the initial funding and mission requirements to provide medical support for such operations.

Tactical emergency medical support (TEMS) practice deviates from standard EMS practice in several important respects. Scene and provider safety are given top priority over the provision of patient care in standard EMS practice, whereas the nature of tactical operations often requires that TEMS personnel deliver care despite dangerous environments and situations. Effective emergency medical support for tactical operations requires knowledge of the tactical environment and operations plus unique skills for patient

assessment and treatment of occupational, traumatic, and toxicological injuries under austere conditions (Table 1). Tactical emergency medical support providers must be able to provide care with less medical equipment, limited space, light and sound restrictions, and without contact to medical control. Remote patient assessment, the practice of triaging, evaluating, and ordering treatment for a patient without being in the patient's presence may be necessary. Patients may require disarmament, render-safe activity, or removal of protective clothing. In addition to providing tactical medical care, TEMS personnel perform other functions that contribute to mission readiness and may provide strategic advantages to mission leaders including: (1) team performance monitoring; (2) assessment of morale and fatigue; (3) preventative health maintenance; (4) pre-emptive medical reconnaissance; (5) gathering of on-scene medical intelligence; and (6) interactions with civilian medical resources.⁴

The first TEMS training program developed in the United States (US) was the Counter Narcotic Tactical Operations Medical Support (CONTOMS) program, created in 1990 by the Casualty Care Research Center (CCRC), in cooperation with the Department of Defense, Department of the Interior, United States Park Service Special Forces Branch, and the Uniformed Services University of the Health Sciences (USUHS).⁴ The CONTOMS consists of a series of courses that focus on the unique medical skills as well as law enforcement principles and techniques necessary for the successful accomplishment of tactical missions.² The primary CONTOMS course prepares previously trained prehospital EMS personnel from a variety of backgrounds for EMT-Tactical certification with a one-week, 58-hour instruction course.⁵ The CCRC also offers a TEMS Medical Director program for physicians involved in tactical operations.⁶ Numerous private organizations offer training based on the CONTOMS curriculum.

The most common approach to recruitment and training of TEMS personnel has been to provide medical personnel with additional training that includes some level of law enforcement training. The CONTOMS and other TEMS training programs require prior training using the 110-hour minimum Emergency Medical Technician-Basic: National Standard Curriculum as a prerequisite. Under certain circumstances, this approach to recruitment and training of TEMS personnel may be undesirable or impractical for several reasons. The decision whether to arm civilian EMS personnel is a controversial issue.^{2,3} Involving civilian personnel increases the size of operational teams, creating potential problems with security clearance and exposing a greater number of individuals to harmful situations. Additionally, most civilian emergency personnel do not have fundamental training in tactical law enforcement. Tactical operations require that law enforcement skills must predominate over emergency medical skills for a mission's success. In these situations, providing law enforcement personnel with appropriate medical training may be a more desirable alternative than providing tactical law enforcement training to EMS personnel. This approach would alleviate the need for providing dedicated

Module 1: Preparatory		Module 5: Trauma	
Introduction	3.5 hours	Kinematics of Trauma	1.0 hours
Basic Life Support	3.5 hours	Bleeding and Shock	1.5 hours
Introduction to Human Body	2.5 hours	Soft Tissue Injuries	2.0 hours
Vital signs, History Taking	2.5 hours	Musculoskeletal Care	2.0 hours
Lifting/Moving Patients	3.5 hours	Bandaging and Splinting	2.0 hours
Legal/Ethical Issues	3.0 hours	Injuries to Head and Spine	2.0 hours
Module 1 Examination	1.0 hours	Trauma Skills Lab	4.0 hours
Module 2: Airway		Clinical Rotations	8.0 hours
Airway Didactics	3.5 hours	Module 5 Examination	1.0 hours
Airway Skills Lab	2.5 hours	Module 6: Infants and Children	
Clinical Rotations	4.0 hours	Infants and Children Didactics	2.5 hours
Module 2 Examination	1.0 hours	Infants and Children Skills Lab	3.0 hours
Module 3: Patient Assessment		Module 6 Examination	1.0 hours
Scene Assessment	0.5 hours	Module 7: Operations	
Patient Assessment	4.0 hours	Ambulance Operations	1.0 hours
Patient Assessment Skills Lab	4.5 hours	Special Operations	1.5 hours
Focused History/Physical Exam	5.5 hours	Clinical Access and Rescue	3.0 hours
Ongoing Patient Assessment	1.0 hours	Clinical Rotations	4.0 hours
Communications	1.0 hours	Module 7 Examination	1.0 hours
Documentation	1.0 hours	Module 8: Summary and Practical Exams	
Clinical Rotations	16.0 hours	Program Review	1.0 hours
Module 3 Examination	1.0 hours	Field Training Exercise Review and Preparation	1.0 hours
Module 4: Medical/Behavioral/Environmental/OB-GYN		Medical Field Training Examinations	9.0 hours
General Pharmacology	1.0 hours	Trauma Field Training Examinations	9.0 hours
Assessment and Pharmacology Lab	1.0 hours	Clinical Rotations	4.0 hours
Respiratory Emergencies	2.0 hours	National Registry Examination Preparation	1.0 hours
Cardiovascular Emergencies	3.0 hours	National Registry Examination	3.0 hours
Cardiovascular/Respiratory Lab	2.0 hours		
Diabetic/Neurological Emergencies	2.0 hours	Total	181.5 hours
Allergies/Poisonings/Overdoses	3.0 hours		
Behavioral Emergencies	1.0 hours		
Environmental Emergencies	2.0 hours		
Obstetric/Gynecological Emergencies	2.0 hours		
Medical Skills Lab	3.5 hours		
Intravenous Therapy/Fluid Replacement	1.5 hours		
IV Therapy Skills Lab	3.0 hours		
Clinical Rotations	20.0 hours		
Module 4 Examination	1.0 hours		

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Table 2—Curriculum for tactical emergency medical technician training and education (IV = intravenous; Lab = laboratory; OB-GYN = obstetric/gynecological)

tactical cover and protection for unarmed medics; or if armed, the need for on-going firearms training.^{2,4} Attempts to provide TEMS training to tactical law enforcement personnel without previous medical experience have not been described.

Whether law enforcement personnel without prior medical experience are capable of attaining and maintaining the necessary EMS knowledge and skills has not been demonstrated. Successful completion of the National Registry of Emergency Medical Technicians Examination provides an accepted measure of competence at the EMT-Basic level. If upon completion of the TEMS training program, special agents were able to pass the EMT certifying examination, this would provide an indication of their medical knowledge and skill level.

In this article, a unique TEMS training curriculum for DEA special agents without prior medical training is described, and results of the first three rounds of training are reported.

Methods

Course Description

The course consists of eight modules with a total of 181.5 hours of instruction (Table 2) provided over three weeks. Within each module, participants are provided with both didactic teaching and hands-on, field-based drills. The goal of this course is to provide tactical emergency medical training to agents with no previous medical training and to prepare them to pass the National Registry of Emergency Medical Technician-Basic Examination. More than 90% of the enrolled agents volunteered to take part in the course. Participants were drawn from a pool of tactically skilled DEA agents. All participants held at least a baccalaureate degree. The foundation for the curriculum consisted of the standard Department of Transportation (DOT) EMT curriculum, with approximately 50 hours of training in tactical operations added to the course. Brady's *Emergency Care*, 9th edition was provided to participants to provide a fundamental EMT text as reference. Instructors represented

both Massachusetts and nationally registered EMTs with at least 10 years of experience and a background in military and/or law enforcement. Non-tactical topics, such as basic pediatrics and obstetrics were taught using the DOT standard curriculum, using lectures, slide presentations, and classroom demonstrations. All practical training scenarios were tailored specifically to tactical law enforcement and counter-narcotics tactical enforcement. During practical rotations, an instructor to student ratio of 6:1 was maintained. A total of 16 hours of clinical rotations were conducted by ride-alongs with fire/rescue services in high-call volume, urban areas. This experience is supported by rotations through hospital emergency and intensive care unit settings.

Student evaluations were conducted using standard, national EMT checklists. A written and practical examination was administered at the end of each module. During the final module, agents participate in full-scale, tactical, role-playing scenarios simulating actual tactical operations. The final examination consisted of three parts: (1) the National Registry of Emergency Medical Technicians Basic written examination; (2) the National Registry of Emergency Medical Technicians skill tests; and (3) an objective assessment of the students by qualified instructors in a scenario-based examination. Participants were required to maintain perfect attendance, and an 80% pass rate in class exercises to sit for the final examination. Prior to inception of the course, a goal of 90% of agents passing the National Certifying EMT examination within two attempts was established.

Design—A prospective, observational survey design was used.

Setting—The training and education was provided at the Justice Training Center in Quantico, Virginia.

Participants—The DEA agents enrolled in three Federal Law Enforcement Emergency Medical Technician courses (3-week duration) between November 2000 and April 2002.

Observations—The principal measured outcome for the program was the passing rate of the graduates of the National Certifying Emergency Medical Technicians examination.

Results

Three Federal Law Enforcement Emergency Medical Technician courses were conducted. Ninety-five DEA special agents were enrolled in the courses. 100% of partici-

pants sat for and completed the three-week course. All agents completed the National Certifying EMT examination. 60% of agents passed the examination on the first attempt. 84 of the agents (88.4%) successfully passed the certifying examination within two attempts, achieving a score of 70% or higher.

Discussion

Current TEMS training curricula limit the number of participants to those with previous training and certification as EMTs. This study demonstrates that tactical personnel with no previous medical training can become proficient in basic EMS knowledge and skills through participation in a focused curriculum. While the 88.4% passing rate among these agents on the national EMT certification examination did not reach the initial goal of 90%, it does suggest that this method of training for EMTs may be adequate for the needs of tactical law enforcement. This pass rate was similar to the overall pass rate for the National Registry of EMT-Basic examination.⁷ However, further longitudinal studies will be required to validate these training techniques within tactical operations. As these agents begin putting their skills to use in tactical operations, valuable data will be obtained regarding methods to improve the existing curriculum. Gathering these data specific to the "on-scene" performance of agents who participated in this course will be challenging. Measured outcomes could include number and types of patients encountered with medical, traumatic, or occupational injuries, time to assessment, treatment and evacuation of casualties, or numbers of casualties, deaths, or man-hours lost per operation.

Additional law enforcement agencies may choose to train their own agents in TEMS based on this program. The results of such training systems could be used to augment current models. While the need for tactical emergency medicine training has been recognized for decades, the broad response to terrorist attacks beginning after 11 September 2001 have increased the demand for specialized healthcare providers with skills in TEMS. The Special Agent Emergency Medical Technician training program provides an alternative to the traditional EMT training/CONTOMS route to becoming a tactical medic.

Conclusion

This study presents a new paradigm in the recruitment and training of personnel involved in tactical emergency medicine. This model differs from other TEMS curricula in its recruitment of participants with no previous medical experience. Federal special agents lacking previous medical training participated in and successfully completed a focused, three-week course in tactical emergency medicine.

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