

Resident And Faculty Involvement In Tactical Emergency Medical Support: A Survey Of U.S. Emergency Medicine Residency Programs

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Abstract

Introduction: Tactical Emergency Medical Support (TEMS) is defined as "comprehensive out-of-hospital medical support of law enforcement tactical teams during training and special operations," We attempted to determine faculty and resident physician involvement with TEMS at U.S. E.M. residencies.

Methods: A 12 question email-based survey was sent to all 126 accredited E.M. Response data was analyzed using descriptive statistics.

Results: 82 programs replied to the email survey, for a response rate of 65%. Of these 51% and 28% reported faculty and resident involvement with TEMS respectively. 37% of TEMS-affiliated programs reported using TEMS opportunities as a residency-recruitment tool. Nine programs expressed an interest in developing TEMS opportunities within their residencies within the next 1 - 3 years. The most frequently cited advantages of TEMS exposure were community service, improved interactions with law enforcement, and expanded educational opportunities within emergency medicine. The most frequently cited disadvantages were time commitments, expense, and the hazardous nature of TEMS. Several program directors responded that TEMS offered no advantages, and one felt that TEMS conflicted with "sound physician ethics."

Conclusions: More than half of responding programs report current faculty involvement in TEMS, and another 11% expressed interest in developing TEMS at their institutions. As such, it appears that resident education opportunities in TEMS will continue to increase. However, it is clear even within the respondents that strong negative feelings exist towards TEMS.

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INTRODUCTION

The origins of modern tactical emergency care arguably date back to 1792 and the work of Baron Dominique Jean Larrey, Surgeon-General to Napoleon's Army of the Rhine [1]. In addition to developing the guiding principles of modern field triage, Larrey developed a dedicated corps to treat and evacuate casualties during battle. At Konigsberg, Larrey personally led the ambulance volantes into the field. Unfortunately, this innovative approach was not adopted in the United States, and in 1862, approximately 3000 wounded troops were left untreated for 3 days during the second battle of Bull Run [1].

By Vietnam, the concept of casualty care under fire and rapid evacuation and resuscitation, coupled with appropriate field triage, help reduce mortality rates to 1%, down from 4.7% in World War 2 [2]. Despite both advances in military casualty care and the development of civilian law enforcement tactical units, little thought was provided towards dedicated medical care under fire in the civilian setting. In a survey of special weapons and tactics (SWAT) teams operating in the 200 largest U.S. metropolitan areas, 69% of unit commanders indicated that casualty care was managed by civilian ambulance crews on stand-by in a secure location [3]. In 94% of cases, prehospital care providers had no specialty training and were unable to enter the so-called "hot-zone". During the Columbine tragedy, tactical operators were forced to extract victims to a more

secure location for EMS triage and treatment [4].

Tactical emergency medical support (TEMS) has been defined as “comprehensive out-of-hospital medical support of law enforcement tactical teams during training and special operations” [5]. The first formal TEMS training course was held in 1989, and co-sponsored by the Los Angeles Sheriff's Department and the National Tactical Officer's Association [6]. Since that time, there has been a tremendous growth in the field, including the development of the Department of Defense-endorsed Counter Narcotics Tactical Operations Medical Support Program (CONTOMS), numerous private TEMS training programs at the national and international levels, and the development of the emergency medical technician – tactical (EMT-T) standard [7,8,9,10]. TEMS has become an integrated aspect of some emergency medical systems (Figure 1).

Figure 1

Figure 1: Acceptance of TEMS Within Mainstream EMS.



Metro Toronto EMS ALS ambulance with formal “tactical” designation. Such units respond to routine EMS calls, but are diverted to tactical operations when they arise.

The role of physicians in the development and maintenance of TEMS programs has increasingly come to the forefront [9,10,11,12]. In January 1999, the National Association of EMS Physicians established a task force to exam TEMS-specific issues [13]. The American College of Emergency Physicians, in June 2004, recognized TEMS as “essential component of military and tactical law enforcement teams” [14]. Similarly, the Emergency Medicine Resident's Association endorsed a resolution on the importance of TEMS in May 2004 [15]. In light of recent awareness of both TEMS and the role of physicians in TEMS, we attempted to determine faculty and

resident physician involvement with TEMS at accredited U.S. allopathic emergency medicine residencies.

METHODS

In November and December 2003, a 12 question email-based survey was sent to all 126 accredited allopathic emergency medicine residencies in the United States, as determined by the Society of Academic Emergency Medicine (SAEM) residency web site. Follow-up email was sent to non-respondents 3 weeks after initial contact.

Data were tabulated in a Microsoft Excel spreadsheet (Microsoft Corp, 2000). Response data was analyzed using descriptive statistics. For categorical variables, chi square and Fisher's exact test were used, and a P value of less than or equal to 0.05 deemed to be statistically significant. All analyses were performed with SPSS for Windows 9.01 Standard version (SPSS inc 1989-1999).

The study was reviewed and approved by the Mayo Clinic Institutional Review Board.

RESULTS

A total of 82 programs replied to the email survey, for a response rate of 65%. Of the responding programs, 51% and 28% of programs reported faculty and resident involvement with TEMS respectively.

The majority (74.5%) of program directors viewed physician involvement in TEMS as either positive or very positive (Table 1). Program directors felt that physician involvement in TEMS was viewed positively by their institution 51.1% of the time ($p = 0.89$, two-tailed t test). Fifty-five percent of program directors felt that the local community viewed physician involvement in TEMS favorably ($p = 0.74$, two-tailed t test).

Figure 2

Table 1: Emergency Medicine Residency Program Director View of Physician Involvement in TEMS.

View of EM Physician Involvement in TEMS	By Residency Program (n = 47)	By Institution (n = 45)	By Community (n = 40)
Very Negative	0 (0%)	0 (0%)	0 (0%)
Negative	0 (0%)	0 (0%)	0 (0%)
Neutral	9 (19.1%)	15 (33.3%)	6 (15.0%)
Positive	24 (51.1%)	15 (33.3%)	10 (25.0%)
Very Positive	11 (23.4%)	8 (17.8%)	12 (30.0%)
No Opinion	3 (6.4)	7 (15.6%)	12 (30.0%)

Nearly one third (31.1%) of respondents reporting using

TEMS opportunities as a resident recruitment tool during the application and interview process. Of these programs, 100% reported faculty involvement in TEMS while 85.7% reported resident involvement. In contrast, 67.9% of programs who did not utilize TEMS opportunities as a recruiting tool reported faculty involvement ($p = 0.48$, Chi square), while 32.1% reported resident involvement ($p = 0.10$, Chi square).

Fifty-seven percent (57%) of programs with emergency medical services (EMS) fellowships provided TEMS exposure. No statistical difference existed between programs with and without EMS fellowships for faculty ($p = 0.3$, Chi square) or resident ($p = 0.6$, Chi square) involvement. Six programs reported offering TEMS-specific fellowships. Nine programs expressed an interest in developing TEMS opportunities.

Cited advantages of TEMS involvement were community service, improved interactions with law enforcement, and expanded educational opportunities within emergency medicine (Table 2). A number of individuals viewed no specific advantage from physician involvement in TEMS. The most frequently cited disadvantages were time commitments, expense, and the hazardous nature of TEMS (Table 3). One residency program director felt that TEMS conflicted with “sound physician ethics.”

Table 2: Advantages of Physician Involvement in TEMS, as Perceived by Residency Directors

- Community service, support for EMS and law enforcement, new way to teach EMS to residents, application of disaster and WMD skills, use combat medic skills with new technology transferred from military use, and basis for new breed of pre-hospital provider ready for terrorism first responder situations.
- I don't know enough - sounds interesting
- Opportunity to participate in another amazing facet of EM
- Funding
- Possible recruitment advantage
- Community participation, exposure for EMS Fellow
- Unsure

- For the residency program – None
- Partner with law enforcement
- Another area for EM to expand
- Provision of care to a needy population (the needy population being officers, suspects and civilians within the inner perimeter of a tactical operation). If TEMS is not existent, there is no EMS capability within the inner perimeter.
- Politically endearing
- Providing medical support, “TEMS,” to those operational effected by a special operations law enforcement activity, where traditional medical care (EMS) would be otherwise be restricted, is a service to our community. This form of medical outreach serves to stimulate our medical support personnel career interests and job satisfaction.
- Since our medical support program is hospital based, we maximize credibility with the public. Our position within our regionally established EMS / hospital communities allows those injured immediate and coordinated entry into the medical system by a physician led medical support team. Since our facility and personnel provide regional EMS/trauma care, our program offers a unique chance to partner law enforcement and our health system together.
- Nothing
- Specialized training and unique relationship with law enforcement
- None
- Community service, recruiting
- Resident opportunity
- Could be viewed as an interesting opportunity
- Don't see any
- Operational experience
- It teaches residents about an aspect that is uniquely ours
- None

- Good medical support, decrease chance of good cops dying needlessly, worthy challenge, allows me to use my talents in a helpful fashion, good for PR / hospital; a natural area for EM docs to be involved with
- Dynamic and challenging environment, reinforces EMS skills, great recruiting tool
- Field Experience
- Participation in the community
- Simply a service to police officers and the right thing to do
- I don't see one
- Broadens EM links
- None at this time for the program
- None
- Opportunity to work closely with law enforcement.
- Enhanced EMS exposure
- Specific to an individual's interests. Research opportunities. Raise standard of EMS care
- Better relations with local police, fire, elected officials and community.
- Exciting. Practice life saving skills in a unique environment
- Uncertain that it provides any significant advantage
- Better working relationships through understanding
- Expanding and re-defining the scope of emergency medicine
- Allows residents to practice medicine outside the hospital, learn to think on their feet
- More community involvement with team members
- New medical frontier
- Community outreach and more trained individuals in trying times
- Broadens a residents perspective on EM
- No great benefits or limitations - little involvement as faculty is only part time
- Experience
- Expanded operation medicine beyond EMS/Rescue

DISCUSSION

Since its formal inception in 1989, tactical emergency medical support has steadily gained the acceptance of both the medical and law enforcement communities [6,7,8,9,10,11,12,13]. Attention has now turned to the role of physicians in TEMS [9,11]. Several emergency medicine entities, including NAEMSP, ACEP, and EMRA, have recognized and endorsed TEMS and the role of physicians in TEMS. Chapters on TEMS now appear in numerous EMS-related texts [16,17,18,19].

In 1993, the National Tactical Officers Association published a position statement regarding the role of physicians in TEMS [9]. Amongst the stated recommendations were that TEMS “should be subject to medical control by a physician” and that the duties of the medical officer should include preventative medicine, injury control, as well as direct medical care and control of certified prehospital providers (Figure 2). One means of accomplishing this is providing an opportunity to learn about TEMS during residency training. The majority of residency program directors (74.5%) expressed a positive attitude towards the concept of physician involvement in TEMS.

Figure 3

Figure 2: Resident Involvement in TEMS.



A University of Cincinnati EM resident instructs members of the Hamilton County Police Association (HCPA) SWAT team in medical assessment.

An understanding of emergency medical services is considered a core competency of emergency medicine residency training [20]. TEMS serves as another unique facet of prehospital care, alongside air medical services and disaster medicine. It has been argued that TEMS training is unnecessarily burdensome in the setting of the multiple other core competencies to be acquired during a brief residency. While exotic, would time not be better spent in providing a solid EMS foundation? The two are not mutually exclusive. TEMS physicians require a solid EMS foundation in order to appropriately train first responders attached to tactical units, as well as to perform useful quality assurance and improvement assessments [21]. The exposure of residents to TEMS should not be construed as requiring a month-long

rotation in TEMS. Rather, it should be available as a continuous opportunity for residents with an interest in the topic, analogous to the opportunity of residents to participate in disaster teams and be mentored during their formative years.

At least one residency director expressed ethical concerns regarding tactical emergency medical support (Table 3). The underlying question is whether the role of physician or peace officer is paramount in the setting of apparent conflict of interest [22]. Most tactical situations are fluid and volatile, and do not allow a specific answer to this question. As with other ethical issues, anticipated dilemmas should be addressed and resolved prior to occurrence. It has been argued that failure to plan is in itself unethical [23]. Ideally, a decision algorithm for resolution of ethical conflicts should be incorporated into the memorandum of understanding (MOU). Mentoring and formal TEMS training would provide a foundation for resolving ethical dilemmas based upon past experience.

Table 3: Disadvantages of Physician Involvement in TEMS, as Perceived by Residency Directors

- Liability issues, lack of funding (mostly volunteer), lack of continuity for 24/7 coverage from MD standpoint (viewed as unreliable for call ups), continued lack of understanding from tactical leadership about value of MDs vs “Cop medic” as a source for care in the field.
- So many things to cover in 3 years - seems extraneous when compared to other more necessary curriculum
- Lack of funding
- No Funding
- Liability
- Time for training -- typically 3 days/month
- Time commitment
- Interest
- Time
- People's interest
- Extremely concerned about a program putting a

resident in harm's way - not a job but an education.

- Inherent risk discourages some individuals
- In (my state), this would probably be the lack of EMS personnel to be able to be POST licensed as "reserve" type officers for purposes of tactical operations.
- Cost and liability - nice until someone gets hurt
- A limit to our involvement with TEMS is funding. As a private, hospital based program, we do not have access to the traditional funding sources as a police or fire/EMS based program would. In addition, since all of our medical providers primary duty is to the hospital and related services, the flexibility to deploy on operations and exercises can be limited.
- Complicating this is our relationship to the law enforcement agencies that we support. Federal & state monies that would be available for police or fire/rescue agencies are not available to our hospital based support team.
- Time could be better spent elsewhere
- Liability, time requirements, training requirements
- Protected Time for Physicians
- Time commitment
- If someone gets shot
- Not too many people care about it one way or the other, danger
- I have an inherently negative view towards TEMS - conflict with sound physician ethics
- Time and resources for training
- Requires significant commitment by a single individual within the institution
- Time and Money Commitment
- Volunteer status, with limited reimbursement available... most cities / municipalities are broke... "docs make too much money already", and politics prevent decent reimbursement. For many physicians, the lack of funds for malpractice

coverage prevents their getting involved.

- Level of physical aptitude, dangerous yet frustrating (hurry up and wait)
- Inordinate amount of time to plan and navigate political waters. TEMS not universally popular with faculty/residents
- Available time
- Little enough time to teach essentials of EMS to residents.
- Personal safety
- Time away from other duties and personal risks
- Personal risk - been shot at
- Financial and risk-benefit concerns
- Firearms
- Some one could get hurt
- Becoming accepted by the PD. This requires time and effort in building
- Dangerous, hard to schedule, hard to predict when units called up
- Time to properly train with SWAT. They train 1 full day each month. It is too much time commitment for the average EM physician and resident. Usually there is no funding for this endeavor.
- Infrequency of interaction
- Is no funding for this endeavor.
- Possible liability issues
- Time: Because of duty hour restrictions, there are limitations as to how much residents can be involved (if residency sanctioned)
- Specialized training and acceptance by the team
- Liability
- Funding for the resident, as this is not a patient care rotation

- Time
- Safety
- As with all operational medicine issues. The challenge of looking beyond the Cowboy stuff and getting down to the nuts and bolts of planning, training, MOUs, etc.

The role of the TEMS provider should ideally be one of medical conscience for the tactical commander. TEMS has been viewed as the provision of care to a “needy population”, in this case any injured individuals within the hot zone (Table 2). It has even been argued that failure to provide a TEMS response to a tactical unit is tantamount to a posture of gross indifference to human life. As such, it might be argued that support for TEMS is in fact the most ethically sound position. Western society would not condone the lack of immediate medical care for soldiers during combat. Ethically, the question is analogous to physician decisions in preparing for war casualties [24].

A frequently cited positive aspect of TEMS is community service, and specifically the ability to provide support for law enforcement personnel. Although not statistically significant, residency directors viewed both their own institutions and the community as less supportive of TEMS than their individual programs (Table 2). This decrease in positive responses appears to be due to an increase in neutral or no opinion responses, rather than an increase in frankly negative responses. However, the community has never actually been surveyed about its views on TEMS.

The most consistently cited disadvantages of TEMS include time constraints, funding constraints, and liability. The issue of liability deserves further study. TEMS by definition is a high risk and high profile venture. TEMS physicians face medical liability issues concerning not only malpractice but also conflict of interest and abandonment. As an example, ethical issues aside, if a tactical operator and a suspect are simultaneously wounded, who receives immediate attention? The CONTOMS remote assessment methodology (RAM) distinguishes between friend and foe when determining who receives care under fire [25]. As such, TEMS responsibilities should be delineated and prioritized under the MOU.

Civil liability is also an issue in TEMS, especially as physicians are viewed as wealthy members of society and therefore a reasonable litigation target. Non-sworn TEMS

physicians may be especially vulnerable to litigation after a tactical response, particularly if armed (Figure 3). Although controversies in civilian versus sworn officer status and armed versus unarmed provider status have previously been discussed, no data exists as to actual liability risk [26].

Figure 4

Figure 3: The Ongoing Controversy – Armed versus Unarmed Support



A University of Cincinnati EM resident provides armed cover during a simulated patient extrication drill in a mall.

A final disadvantage voiced by residency directors concerns the element of health risk posed by TEMS, especially when operating within the hot zone. As a residency director said, “[I am] extremely concerned about a program putting a resident in harm's way – not a job but an education.” It is a fact that tactical operations have an inherent risk. As such, TEMS should not be a mandated residency activity. However, interested residents should be counseled regarding the risk and then be allowed to make an informed decision. The situation may be viewed as analogous to participation in helicopter-based EMS (HEMS). Residents in emergency medicine frequently participate in HEMS, and tragically have died as a result of that endeavor. HEMS is considered higher risk both from aviation and EMS stand-points, but is also viewed as an important learning tool for residency education.

CONCLUSIONS

More than half of responding U.S. allopathic emergency medicine residency programs report faculty involvement in

TEMS and more than one quarter report resident involvement. Six programs offer TEMS-specific fellowship opportunities, and another nine have expressed interest in developing TEMS at their institutions. As such, it appears that resident education opportunities in TEMS will continue to increase. It is clear, however, that ethical and logistical concerns remain in fostering resident physician involvement in TEMS. These issues must be discussed and resolved in order for TEMS to grow as a specialty.

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