Defensive Capabilities for Firefighters Trained in a Tactical Environment

Executive Analysis of Fire Service Operations In Emergency Management

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ABSTRACT

The problem was that the Yuba City Fire Department's Tactical Emergency

Medical Services (TEMS) personnel are placed in potentially hostile environments during

Special Weapons and Tactics (SWAT) operations without any defensive capabilities.

The purpose of this research project was to assess what is the appropriate level of

defensive capability for TEMS personnel during these operations. This project was

undertaken because of an incident where TEMS personnel were placed in a hostile

environment with no protection. To accomplish this task, descriptive research was used

to answer the following questions:

- 1. What are the expected duties to be performed by TEMS personnel during tactical operations?
 - 2. What is the best location for TEMS personnel during a tactical incident?
 - 3. What is an appropriate level of defensive capability for TEMS personnel during a tactical incident?

The procedures used to accomplish this research included a literature review, a survey, personnel interviews and a search of the World Wide Web.

The results showed that the minimal level of acceptable care that should be provided during tactical incidents is Basic Life Support (BLS). The research also showed that there were two areas to provide medical support, the inner and outer perimeter of an incident. Additional, most agencies do not provide self-defense capabilities for their TEMS members, but when they do, it is in the form of a handgun. Recommended by the research was to continue to provide BLS support in the inner perimeter and use a phased approach to providing self-defense capabilities to TEMS personnel.

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INTRODUCTION

The ever-increasing complexity of emergency incidents that require response from both fire and law enforcement agencies has seen a steady rise over the last decade. Law enforcement agencies are becoming more reliant on fire agencies to provide not only fire related response but also medical response to domestic terrorism. Nationally televised examples of such incidents include Waco, Texas, Oklahoma City, and Littleton, Colorado. However, these are not the only examples of such incidents, and the trend for large-scale hostage taking with multiple casualties seems to be on the increase.

Tactical Emergency Medical Services (TEMS) became prevalent in the early 1990's with many law enforcement Special Weapons and Tactics (SWAT) teams and the need for emergency medical attention in a potentially hostile situation has not decreased. The problem is that the Yuba City Fire Department's TEMS personnel are placed in potentially hostile environments during SWAT operations without any defensive capabilities.

The purpose of this research project is to assess what is the appropriate level of defensive capability for TEMS personnel during these operations. The research method used for this project will be descriptive.

The research questions that will be answered are:

- 1. What are the expected duties to be performed by TEMS personnel during tactical operations?
- 2. What is the best location for TEMS personnel during a tactical incident?
- 3. What is an appropriate level of defensive capability for TEMS personnel during a tactical incident?

BACKGROUND AND SIGNIFICANCE

The creation of tactical medical teams came shortly after the Vietnam War with the realization that rapid stabilization of casualties in the field, along with immediate extrication and transportation to a fully equipped medical facility, greatly increased the survival rate of those that were injured. In 1990, the Counter Narcotics Tactical Operations Medical Support Program (CONTOMS) was created. This program was created to provide standardized medical training in the tactical environment.

On May 1, 1992, four students were killed and nine were injured as a former student opened fire at Lindhurst High School in Olivehurst, California. This school shooting occurred within five miles of the Yuba City Fire Department (YCFD). Local SWAT resources from our city were requested to this incident and it was eventually resolved non-violently with the shooter giving himself up to law enforcement. The shooter had taken 70 students hostage and law enforcement officials were at a standoff for eight and a half hours. This incident occurred prior to the establishment of the YCFD's TEMS team but emphasized the need for medical personnel to be attached to the SWAT team. During this episode, medical personnel were staged outside the school grounds far from the actual incident.

In 1994, then Sergeant George Carey approached YCFD management and began the process for setting up a TEMS team. The reaction from the fire department was positive and eventually nine fire department members were selected to participate with the SWAT team during high-risk police operations. Three were assigned to each shift, therefore allowing a minimum of two firefighters per call out. Fire department members were put through a 24-hour basic SWAT course and then participate in quarterly SWAT

training. This training consists of tactical movements as well as less lethal control devices and firearms training.

In 1997, the YCFD TEMS personnel were dispatched with the Yuba City Police Department (YCPD) SWAT team to a joint operation with another agency. The personnel from the Fire Department dispatched to this incident included this author and another fire fighter. This was a high-risk warrant service with multiple people in a structure. Intelligence was gathered on the house and a plan was developed to do a simultaneous assault on the house from two different approaches. The house was on a corner lot that had an alley access to the north and street access to the east that were equal distances. Both teams were to move at the same time and contain the subjects in the house and set up a perimeter.

The YCPD team was setting up at the north alley location when a gunshot was heard and a distress call over the radio came out for an officer down. The YCPD SWAT team immediately moved in and attempted to secure the location. The SWAT team went into a full tactical mode and the TEMS members were left somewhat unprotected. As the SWAT team moved in, the subjects inside the residence fled and were running past the TEMS members.

This incident illustrated the need for YCFD TEMS members to have some form of self defense capabilities and issues of where the team members were located (inner vs. outer perimeter) played no significant role. This was an incident that went tactically bad and members of the YCFD were placed in a compromising position without the ability to defend themselves.

An attempt was made at this time to facilitate providing self-defense capabilities to the TEMS members, but was unsuccessful at both the Fire and Police Departments. The focus at that time was solely for arming TEMS members with a weapon and a systematic approach was not utilized. Since that time, George Carey has been promoted to Deputy Chief and I have been given the leadership role at the Fire Department for the TEMS team. The TEMS program has been revitalized and training has been placed at a higher priority at both the Fire and Police Departments. A new awareness has been realized of the potential dangers that face the TEMS and SWAT personnel during these incidents with the events that have occurred over the past several years.

Deputy Chief Carey has requested that fire department personnel be armed with some form of defensive capability while participating in SWAT operations. The future implications of such a commitment will again place the cooperative level of the YCFD and YCPD on the leading edge of today's public safety challenges by providing a more comprehensive service to the citizens of Yuba City and the surrounding communities.

This project relates to Executive Analysis of Fire Service Operations in Emergency Management in Chapter Three. In this chapter, the unified command structure is discussed and how specifically when more than one agency has the responsibility for the decision making process during an incident. In this case, the joint operation between law and fire not only fulfills a tactical role, but also that of being able to provide immediate medical care for casualties that may result from the operation.

LITERATURE REVIEW

"Fire service and law enforcement personnel have long worked together, bound by a common approach to confusing, demanding, overwhelming situations that require decisive action." (McConnel, Van Stralen, 1997, p. 32)

As today's emergency incidents become more complicated and law enforcement and fire department response become more integrated, the level of risk that the fire fighter faces is growing. The types of response that dictate emergency medical care in a tactical environment pose significant problems for untrained EMS workers. There are several important issues that need to be addressed including what is expected of TEMS personnel during the incident and where they should be located for providing care.

Additionally, the issue of whether TEMS personnel should have a form of defensive capability becomes significant depending on where they are located during an incident.

1. What are the expected duties to be performed by TEMS personnel during tactical operations?

"The tactical environment differs markedly from the Emergency Medical Services (EMS) or hospital setting where care is ordinarily rendered." (McConnel, Van Stralen ,1997, p. 32)

The tactical environment poses a different challenge for the emergency worker; the TEMS provider must work in often-difficult situations where personal safety can be of the utmost priority. McConnel and Van Stralen (1997) depict it as a chaotic environment that is characterized by uncertainty and instability. This type of environment is not typically what the emergency care provider is used to being in with respect to personal safety.

They feel the TEMS providers' main function at a tactical emergency is to provide medical care to the SWAT members, by standers and perpetrators. However, if the TEMS member is playing a dual role as a tactical team member, then medical care may take a secondary role until the situation is deemed safe.

The key to providing adequate medical care on scene of an incident is to ensure adequate oxygen delivery to the tissues. "The goal of the TEMS provider should be delivery of oxygen to the tissues to preserve vital organ function." (McConnel, Van Stralen,1997, p.32) This basic care is related to the initial ABC's of pre-hospital care where by airway management and breathing are a priority and then circulation can be augmented.

McConnel and Van Stralen (1997) provide a model on the decision making process of interferences other than threats to medical decision making. The other aspects of the decision-making process are:

- 1. Lack of knowledge: TEMS providers do not normally have prior medical knowledge of the patient, and may not participate in tactical briefings.
- 2. Information overload: EMS personnel may be inundated with extraneous information that may distract from their ability to provide adequate medical care.
- 3. Excess demands or inadequate resources: Multiple casualties may quickly overwhelm the capabilities of a small contingent of TEMS personnel.
- 4. Predictability: Every patient needs to be assessed recurrently and parallels cannot be draw with previous patients for treatment.

- 5. Complexity: Problems in the tactical environment are often too complex to be reasonably trained for or to be covered by specific protocols.
- Insufficient authority: TEMS personnel rarely have the autonomy to move or make decisions without command staff approval.
- 7. Fear: Flight, fight or freeze, these emotions can become dangerous if manifested in the wrong situation.

This model represents additional challenges that the EMS provider must face during tactical operations. "All threats require rapid assessment of the situation, orientation to the problem and decisions for action." (McConnel, Van Stralen,1997, p.36) Given the above sets of conditions, training for these types of incidents requires more than just classroom medical procedures. TEMS providers must be placed in as realistic scenarios as possible to try and simulate conditions that would have these conditions present themselves. TEMS personnel then would have a broader experience base and have a higher likelihood of providing increased medical care.

Similarly, Carmona and Rasumoff (1993) believe that the main function of TEMS personnel is to provide medical care at a tactical incident. They believe that field medical care can be broken down in tiers. "One tire is called Basic Life Support and refers to the EMT-I level of care." (Carmona, Rasumoff, 1993, p.73) The current level of service that is provided by the YCFD TEMS members is at this level.

The second tier in the system would be Advanced Life Support, and this would include paramedics. Currently the local ambulance provider does not have any of its staff members participating in the TEMS program. They can however be dispatched to the scene if needed by fire department personnel.

If the incident moves through the first two tiers, then it will end in the third tier. The third tier consists of hospital level care at the physician level. The tier system can represent a life saving measure as well as system wide benefits. Carmona and Rasumoff (1993) feel that most field victims end up actually only needing BLS measures for their treatment and that once the victim is in a secure environment, the other tiers of the system can be implemented. Having the ability to move the victims through the system allows for the best possible treatment at the appropriate time.

Carmona and Rasumoff (1993) came to certain conclusions regarding TEMS provided under tactical conditions.

- Greater medical knowledge and skills may not mean greater field medical care actually available to the victim.
- 2. Safety may be adversely affected by efforts to use greater medical knowledge.
- 3. Basic Life Support knowledge and skill may well be sufficient to temporarily deal with the majority of field medical problems, at least until a victim can be removed to cover and concealment.

With these assumptions in mind, BLS care is sufficient in a hostile area where there is an immediate threat. ALS care should be provided in an area that provides a level of protection afforded by cover and concealment. Physician level care can then be provided away from the threat area allowing optimum treatment. The use of a tiered approach allows the victim to be moved where advanced medical care can be provided safely.

Carey (1995) also states that having definitive treatment for casualties in the field greatly enhances victim survivability. Having medical resources as close as possible to

the incident provides for the most rapid care. This increase the likelihood of survival for the victim as treatment is provided within the "golden hour".

"Current protocol makes the TEMS providers responsible for immediate stabilization of a casualty and removal to a handoff point where care of the injured party may be continued by advanced life support personnel. (Carey, 1995, p. 39) Again here it is emphasized that the primary responsibility of the TEMS member is to provide medical assistance during these operations.

2. What is the best location for TEMS personnel during a tactical incident?

There is much controversy in tactical law enforcement on where EMS personnel should be situated during a tactical mission. The National Tactical Officers Association (NTOA) in their position statement on the inclusion of TEMS personnel at tactical law enforcement operations states that, "TEMS should be provided within the inner perimeter by tactically competent certified prehospital care providers..." (Carmona, Rasumoff, 1994, p. 77)

Again, the feeling is that having tactically trained emergency care providers in the inner perimeter, medical care can be provided immediately until the subject can be remove to a secure location. Wylie (1999) uses information from the Casualty Care Research Center's Emergency Medical Technician –Tactical Student Handbook that lists the pros and cons of placement in the inner perimeter.

Inner Perimeter

Pros:

 Close to the site of injury, with the best chance of providing lifesaving intervention.

- Most advantageous position to provide support if cut off from outside hostile action.
- Can more accurately advise the tactical commander on preventative medicine and treatment options.
- Emphasizes the medics' role as an integral part of the team.

Cons:

- ♦ Least safe.
- Susceptible to rapidly changing conditions.

Outer Perimeter

Pros:

- Relatively safe for unarmed personnel.
- Good location for providing advice and consultation to the tactical commander.

Cons:

- Medics are potentially a great distance from patients with acute needs.
- Distance limits chances of immediate intervention in time critical emergencies.
- Medics may be cut-off from the ERT [Emergency Response Team] if hostile actions sever ties with the outside.
- Distance makes it difficult to evaluate ongoing or dynamic medical threat to the team.
- ♦ Places emphasis on the medics' role as an outsider.

Wylie's (1999) analysis of the pros and cons listed lead to "...the decision of the tactical commander of the St. Peters ERT that CCFR personnel assigned to the ERT would stage at the entry point of any structure." (p. 19) This decision was based upon the ability of the personnel in this study to have defensive capabilities.

3. What is an appropriate level of defensive capability for TEMS personnel during a tactical incident?

"It seems logical that one of the basic requirements is the medic be able to protect himself and his patient, or that someone protects them, or they remain in a secure location" (Frazier, Grande, Kowalski, 1998, p.44).

The discussion on the level of appropriate defensive capability has mostly centered on whether TEMS members should be armed or not, but little in the literature has focused on other options. As the placement of TEMS members in a tactical incident is looked at, having them in the inner perimeter is the area where the most potential danger exists. But as with any dynamic incident, conditions change and TEMS members are at risk no matter where they are located once outside the command post area.

Carmona (2001) states that, "Those for arming have stated that it is for the purpose of the TEMS personnel protecting themselves should a sudden threat emerge in the inner perimeter." (p.61) The reasoning behind arming TEMS members is the belief that they need to be in the inner perimeter in the event of immediate medical need. This tenant does hold true, however in reality as experienced; the incident can expand rapidly and place TEMS members in danger outside of this zone.

In reviewing the Wichita Police Department tactical medical program proposal, the decision was made to defensively train and arm their TEMS personnel. Again the

reasoning behind this decision was to provide these personnel with the ability to adequately defend themselves in a hostile situation. In addition, the Gresham Oregon Police Department has made the decision to arm their TEMS members. "As part of the team, danger is inherent. They may at any time need to protect their own lives or that of another team member." (Maunder, 1991, p.34) Here again, it is the realization that TEMS members as part of a tactical team are exposed to potential danger while performing their duties.

All of the literature reviewed focused on arming TEMS personnel, but there are other options for providing self-defense capabilities. These options include Defensive Tactics, Baton/ASP/Nunchaku, Chemical Agent Spray, Kinetic Energy Projectiles, and Tasers. All of these options do provide for a level of protection in the tactical environment and can be easily implemented for the TEMS provider. The uses of these devices are considered non-deadly force applications according to the YCPD Policy Manual. The Policy states that, "...the ultimate objective of every law enforcement encounter is to minimized injury to everyone involved." (YCPD Policy Manual, 2001, sec. 300.23)

Literature Review Summary

The literature review identified several trends in the providing of medical personnel at tactical incidents. The main priority of TEMS personnel involved in the incident is medical support for team members, by standers, and perpetrators. This is provided at a minimum level of BLS care in the inner perimeter with ALS care in a more secure area. There are also several factors outside of providing medical care the TEMS

members need to have exposure to so that appropriate decisions can be made in stressful situations.

The issue of placement of personnel during an incident becomes directly related to the ability to provide definitive medical care in a rapid and appropriate fashion. The current literature reflects the desire for TEMS personnel to be placed in the inner perimeter, but is aware of the inherent danger that goes along with this placement. A cost benefit analysis needs to made of what the tactical team is willing to accept in trade for immediate medical care vs. the risk associated with being in the inner perimeter.

The previously discussed issues lead to the ultimate debate in providing TEMS at a tactical incident. This debate is centered on whether non-law enforcement personnel should be armed or unarmed. There are strong arguments on both sides of the issue and the focus for this discussion was allowing TEMS members to carry weapons. However there are several non-lethal options that can provide a minimum level of defensive capability.

PROCEDURES

Descriptive research was used to gather information on what some of the issues are that will present themselves when determining what is the appropriate level of self defense capabilities for TEMS members. Information for the project was acquired from several different sources. The process is as follows:

Conduct a literature review of materials within the National Fire Academy's
Learning Resource Center. This included but was not limited to, books,
periodicals, Executive Fire Officer Applied Research Projects and codified
reference materials.

- 2. Expand the search by using the World Wide Web and Internet using the key words "Tactical Emergency Medical Services" and "TEMS".
- 3. Develop and distribute a survey instrument using the current tactical officers at the YCPD and the TEMS personnel at the YCFD. The survey includes all 20 participants in the SWAT program due to the direct implications of the results. All surveys that were handed out were returned completed.
 (Appendix A)
- 4. Conduct personal interviews with the Police Chief, Deputy Chief, and the Lieutenant directly responsible for SWAT operations. All three police officials were asked the same questions:
 - A. What do you feel the role of the TEMS personnel has become?
 - B. How do you see the TEMS personnel fitting in with the SWAT team?
 - C. Where is the best position for the TEMS personnel during a SWAT operation and why?
 - D. What do you feel is the appropriate level of defensive capabilities of the TEMS members and how can this be accomplished?
 - E. Where do you see this program in the future?
- 5. Use the National Tactical Officers Association web site to contact other agencies and obtain reference material.

Limitation and Assumptions

The literature search and review of corresponding materials revealed that very little research and/or written documentation has occurred for this subject matter. Most of the literature that could be found came out of the NTOA and Direct contact with Richard

Carmona, U.S. Surgeon General. The ability for the results of this research to be implemented will be dependent upon agreement between Police and Fire department management and corresponding liability issues.

It is assumed that all the people involved in the survey and with the interview process answered truthfully. The surveys and interviews were limited to those actually involved in the process because of the implications and risk that may potentially result.

Definition of Terms

<u>Advanced Life Support:</u> - personnel provide more sophisticated medical care including cardiac monitoring, advanced airway management, and injecting medications.

<u>Basic Life Support:</u> - refers to medical care of a level that can be provided without inserting an implement into the patient's body.

<u>Pre-hospital Care:</u> - medical care that occurs outside a medical facility that can be either BLS or ALS treatment and typically does not include a physician.

<u>Tactical Environment:</u> - a law enforcement incident that requires special skill from the participants and is usually associated with high risk or potential loss of life.

RESULTS

This document is written first to identify what role the TEMS members have during a tactical operation and secondly to identify the best position for them to perform their duties. Additionally, the issue of whether the TEMS members should have some form of defensive capability was addressed.

All research questions were answered using a combination of results including a survey, personnel interviews and information gathered from the Causality Care Research Center CONTOMS data collection project. The survey was sent to all 20 members of the tactical team and all 20 were received back giving this research tool a 100% confidence level in the results of the survey. (Executive Development Student Manual, 2001, p.3-40)

Research Question #1: What are the expected duties to be performed by TEMS personnel during tactical operations?

This research question was used to determine what the level of expectation was from the tactical team members regarding the function of TEMS personnel at a tactical incident. In the debate of function and location, clear expectations of duties needs to be identified.

Survey Question #1 – Do you feel that Tactical Emergency Medical Services (TEMS) are necessary during SWAT operations? This question was used to identify the feeling of the team on the overall services of the TEMS members. All 20 of the members of the team answered this question and 100% of the respondents felt that this was a necessary function at a tactical incident.

Personal Interview Question #1 – What do feel the role of the TEMS

personnel has become? All three of the interviewees felt that the role of the TEMS

members has been very positive. Police Chief Richard Doscher states: "They have

become an integral part of our SWAT response unit and a much appreciated medical

resource for immediate need on scene within a critical environment" (Doscher, Personal

Interview, July 2002). Lieutenant Jeff Webster, SWAT Commander, believes that the

"TEMS personnel are an integrated component of SWAT" (Webster, Personal Interview, July 2002).

Survey Question # 2 – Do you feel that the TEMS personnel are sufficiently trained to handle the medical emergencies during a SWAT operation? All team members responded to this question and 100% felt that the medical training received by the fire fighters was sufficient.

Personal Interview Question # 2 – How do you see TEMS personnel fitting in with the SWAT members? Again all three of the people interviewed had a very positive response to this question. All felt that the integration between police and fire was a novel approach and the usual rivals that exist were not a factor. It was felt that a true team environment has been created which is critical in high stress situations. Deputy Chief George Carey felt that "The tactical personnel enjoy sharing what they know with the TEMS side." (Carey, Personal Interview, July 2002) Doscher echoed those same feelings and stated, "There is an acknowledgement of separate areas of expertise within the unit personnel and an appreciation for it." (Doscher, Personal Interview, July 2002)

The Casualty Care Research Center has collected data on tactical incidents through CONTOMS. This is the only specific research that could be found related to tactical law enforcement medical support. The survey was conducted from July of 1990 to June of 1997 and included 186 agencies and 4435 incidents.

Table 1 contains the distribution of treatment rendered during these incidents.

The most common treatment that was provided to the patients was for bandaging some type of wound. Almost all of the procedures that occurred at these tactical incidents are considered to be BLS with only approximately 6% considered being ALS treatment.

Table 1

Table 1					
Treatment Rendered					
	Tactical Team	Law Enforcement	Perpetrators	Bystanders	Overall
Bandage	113	37	96	19	265
Tourniquet	0	0	0	0	0
Splint	21	10	3	4	38
Backboard	4	4	19	7	34
Pain Medication	23	9	2	0	34
Oxygen Administration	13	7	30	8	58
Airway Adjunct	1	3	16	1	21
IV Fluid	14	3	26	5	48
Eval/Monitor	98	32	105	40	275
Other	186	30	86	15	317

Note. From the CCRC Research/Data Collection Project, Data Injury Page, 2002 p.6, www.usuhs.mil/ccr/data_injury_page.htm

Research Question # 2: What is the best location for TEMS personnel during a tactical incident?

The placement of TEMS personnel during a tactical incident can be critical when it comes to providing medical care. The issue is the ability to provide rapid patient assessment and treatment in a potentially hostile environment.

Survey Question # 3 – Where should TEMS personnel be staged during a SWAT operation? All 20 of the members surveyed answered this question and 85% (17) believed that the best location for the tactical members was in the inner perimeter. However, 15% (3) felt that the best location for TEMS personnel was in the outer perimeter.

Personal Interview Question # 3 – Where is the best position for TEMS

personnel during a SWAT operation and why? – Again all three law enforcement

officials were in agreement on where TEMS members should be during a tactical incident. Carey stated, "Some agencies actually integrate their TEMS personnel into the entry team." (Carey, Personal Interview, July 2002) He did raise the issue of safety with TEMS members being placed on the entry team and felt that this would hinder their main function, medical support. Doscher also believes that the inner perimeter is the best placement for TEMS personnel. He stated, "The expertise of the TEMS personnel is best suited by their close proximity to the critical incident and not blocks away at the outer perimeter command post environment." (Doscher, Personal Interview, July 2002)

Webster also shared this view and stated that TEMS personnel should be "...generally as close as safe to the tactical operator." (Webster, Personal Interview, July 2002)

In the study done by the CCRC, the issues of at what stage of the operation do most injuries occur was analyzed in their data collection. Table 2 shows the break down of injuries by category. Injuries that occur during training accounted for 22% of the total and point to the need for having TEMS personnel available during training exercises. However the majority of all the injuries, 60%, occur during entry assault and tactical execution. Both of these categories are functions that would normally occur in the inner perimeter.

Table 2

Distribution of Casualties by Phase Of Operation					
	Tactical Team	Law Enforcement	Perpetrators	Bystanders	Overall
Containment	12	7	41	14	74
Approach	6	5	2	5	18
Entry Assault	118	15	125	20	278
Tactical	42	20	71	7	140
Execution					
Withdrawal	8	0	5	1	14

Training	136	17	0	3	156
Other	6	5	6	6	23

Note. From the CCRC Research/Data Collection Project, Data Injury Page, 2002 p.6, www.usuhs.mil/ccr/data_injury_page.htm

Research Question # 3: What is an appropriate level of defensive capability for TEMS personnel during a tactical incident?

The previous two research questions have tried to establish whether or not TEMS personnel are appropriate at the scene of a law enforcement tactical incident and where they should be placed during that incident. If it is assumed that TEMS personnel are attached to the tactical team, then it must be determined if they should be able to defend themselves.

Survey Question # 4 – Should TEMS personnel have some type of selfdefense capability? Again, all of the respondents felt that TEMS members should have some type of self-defense capability.

Survey Question # 5 – If you answered yes to question 4, what would be the appropriate level? All 20 of the people surveyed indicated that they thought that the TEMS members should be armed with a firearm. Several of the respondents also indicated that that was not the only form of self-defense that they thought was appropriate. In addition, two felt that defensive tactics were also appropriate. Another three thought that chemical agent spray would be appropriate, one stated that kinetic energy projectiles should be used at a minimum. Two more felt a Taser would also be an appropriate level of defense.

Survey Question # 6 – If TEMS personnel have defensive capabilities, could they be used for other duties during a SWAT operation (i.e. perimeter control)? The survey group was split on this issue, with 70% (14) answering that TEMS personnel should not be able to perform other functions if they had defensive capabilities. The other 30% (6) answered that it would be appropriate to perform other duties.

Personnel Interview Question # 4 – What do you feel is the appropriate level of defensive capabilities for the TEMS members and how can this be accomplished? Both Doscher and Carey believe that the defensive capabilities should be focused in two areas, chemical agent spray and handguns. Doscher stated that "while TEMS members are trained in a familiarization aspect of team weapons, I would much prefer they be armed as a self defense measure, should their inner perimeter tactical officer coverage be negated in some fashion." (Doscher, Personal Interview, July 2002) Carey states, "My concern is that we will follow the track that someone has to get hurt before something is done, before we can break down the resistance." (Carey Personal Interview, July 2002) Webster is also in agreement with having the TEMS members armed with handguns; "Minimally I feel they should be armed with handguns for personnel safety reasons and if the situation were to get out of control." (Webster Personal Interview, July 2002)

All three felt that training for both these options could be done "in house" at minimal cost to either agency. Carey believes that training for implementing a handgun as a defensive weapon would take approximately eight hours with quarterly qualifying and chemical agent spray training which would last approximately four hours.

Personnel Interview Question # 5 – Where do you see this program in the future? Again all three law enforcement officials felt that the TEMS program would

continue to be an asset to both agencies. Doscher stated, "I think we've developed an excellent working relationship at the line level between police and fire. We should continue to foster that." (Doscher Personal Interview, July 2002)

DISCUSSION

After a thorough review of the literature, the YCFD TEMS team is addressing two very controversial issues. Providing medical services is becoming more commonplace at a tactical incident, but placement and whether TEMS personnel should be armed is more complex. According to the CCRC (2002) in their study, "Tactical EMT's provided most of the medical care." Currently the care provided by the YCPD TEMS team is BLS and has been sufficient for operations thus far. This level of care, while may be not the most common, appears to be the minimum acceptable and most used level of care at incidents according to the literature review.

The YCFD's TEMS use the concept of a tiered response when the team is in a "high risk" situation or large operation that could include multiple subjects. This concept has been in practice since the inception of the program and ALS personnel are staged in the outer perimeter and assume patient care after the patient is extracted from the inner perimeter by TEMS personnel. "Since most field victims end up actually needing only BLS measures, the organization of an EMS system into tiers can represent a life saving measure with system wide benefit." (Carmona, Rasumoff, 1993, p.73)

Having TEMS personnel on the inner perimeter can provide for more rapid treatment of patients during a tactical incident. This placement, however, places the TEMS member at potentially more risk. There is a cost/benefit analysis that must be done by individual organizations on whether this is appropriate or not. "It is known

statistically that few serious injuries occur during the mission and although inner perimeter response capability may be desirable it may not be essential." (Carmona, 2001, p.62)

Carey stated "By placing them [TEMS personnel] on the inner perimeter, they are in a position of relative safety but immediately available to relocate should they be needed." (Carey, Personal Interview, July 2002) The research done for this project does show support for placing TEMS members on the inner perimeter not only from the team members, but also from law enforcement management.

Another way to insure a more secure environment for the TEMS member in the inner perimeter is to not make them a part of the entry team. Wylie (1999) asserts "By staging TST [tactical support team] personnel at the point of entry to a building, for example, you can accomplish the goals of prompt medical support for the persons operating in the inner perimeter, but still maintain a degree of safety for the TST." (p.17) This gives the TEMS member close access to the situation, but not the direct threat of involvement if they were part of an entry team.

The research for the issue of arming TEMS members again shows support from both team members and law enforcement officials. The research also did show that there was support for additional measures of self-defense capability. Specifically, both Doscher and Carey (2002) stated that have the TEMS members trained in the use of chemical agent spray would be beneficial. The training for the use of the spray would consist of a four-hour block and could be done by police department personnel at a minimal cost to both departments, and it could be built into scheduled training.

The firearm issue becomes more complex, but is a viable option. The position paper done by the Wichita Police Department (2002) states that it "...may increase team efficiency while optimizing personal protection for the SWAT medics." (p.8) The basis for have the TEMS member armed is purely defensive in nature. The training required, according to Carey (2002) "...would require the commitment of a moderate amount of training time; probably about eight hours. There would also be the need for TEMS personnel to participate in the scheduled police department training shoots in order to maintain proficiency." (Carey, Personnel Interview, July 2002)

In addition to the standard firearm training, literature suggests some specialized individual training for the TEMS member. "For example, his side arm should be carried in a manner that does not allow the patient ready access to it, as he may be treating a prisoner. Weapon retention must be a part of his skills." (Frazier, Grande, Kowalski, 1998, p.43) In addition, the TEMS member will normally have their weapon holstered and must be familiar with shooting techniques from this position.

The organizational implications from this study again show that the City Of Yuba City is moving into new and enhanced ways of providing service. The YCPD was one of the first ten agencies nationwide to start a TEMS program and now there are only a few agencies that have provided non-law enforcement personnel with some form of self-defense capability. The continued cooperative relationship between police and fire is a benefit not only to the employees of both agencies, but also to the citizens as well.

RECOMMENDATIONS

The purpose of this project was to evaluate the current performance of the Twin Cities SWAT team and the use of the TEMS personnel. The first issue that was looked at was to determine if the team had a clear understanding of what their role was and also if our team was within industry standards. Secondly, the position of TEMS members during tactical incidents needs to be addressed. Finally, what would be appropriate for TEMS members to have for self-defense in a tactical situation?

Research clearly showed that the YCFD TEMS team was providing the appropriate level of care at a tactical incident. It also reinforced the fact that the ability to provide ALS care at scene was well within the norm and the training that was received by TEMS members was appropriate. Having TEMS personnel on the inner perimeter of an incident was less clear in direction. The research showed that there are differing opinions on whether TEMS personnel should be on the inner perimeter. The literature did focus on the ability for rapid care and that is the current philosophy of the YCFD TEMS team. It is the opinion of this author that the current level of service provided and placement of personnel is appropriate and should not change. It is also recommended that TEMS members continue to enhance their medical skills and new procedures become available.

The potential danger that exists for TEMS members during a tactical incident almost requires that they have some form of self-defense capability. After reviewing the literature and research material, it appears that a phased approached to providing this capability is appropriate. TEMS members should be introduced to defensive tactics with, at a minimum, an annual refresher course. Secondly, chemical agent spray should become a priority for training the TEMS members. This has the least amount of fiscal

impact and can be implemented within the shortest time frame. This would then give TEMS members the ability to defend themselves in potentially hostile situations.

The third phase of providing self-defense capabilities to TEMS members would be to provide firearms training under the direct supervision of the YCPD. The classroom training could be broken up over several training sessions to comply with the current training schedule. Qualifying shoots for TEMS personnel could be performed on duty, which again would minimize additional costs.

Future readers of this research need to assess what is organizationally acceptable and operationally feasible when addressing these issues. It is imperative that any attempt to implement this type has complete agreement between both fire and police agencies.

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APPENDIX A

Survey Tool for Identifying TEMS Concerns

Dear (Name of TEMS Member)

I am conducting a survey of the members of the Special Weapons and Tactics team to determine what you feel the role of the TEMS provider is, where they should be located during an incident, and whether they should have self-defense capability. The results of this survey will be used to enhance the TEMS program and give more clear direction of their role. The results of this survey will be used in conjunction with other material for a research paper that I am in the process of completing for the National Fire Academy's Executive Fire Officer Program.

Your assistance in gathering this information will give direction on ways that the TEMS program can be improved. Please return this questionnaire to me prior to July 31, 2002. I appreciate your assistance and advice on this matter and I am looking forward to your responses.

Sincerely,

Garland Garrisi
Battalion Chief
Yuba City Fire Department
(530) 822-4686

APPENDIX A

Survey Tool for Identifying TEMS Concerns

Tactical Emergency Medical Services Survey

Please answer the following survey by circling the appropriate answer.

1 10	asc answer the r	onowing survey by eneming the appropriate answer.
1.	Do you feel tha SWAT operation	t Tactical Emergency Medical Services (TEMS) are necessary during ons?
	Yes	No
2.	•	t the TEMS personnel are sufficiently trained to handle the medical at may occur during a SWAT operation?
	Yes	No
3.	Where should 7	TEMS personnel be staged during a SWAT incident?
	A. At least	two blocks from the incident.
	B. The out	er perimeter.
	C. The inne	er perimeter.
4.	Should TEMS 1	personnel have some type of self-defense capability?
	Yes	No
5.	If you answered	l yes to question 4, what would be the appropriate level?
	C. Chemic	SP/Nunchaku al Agent Spray Energy Projectile
6.	_	nnel have defensive capabilities, could they be used for other duties operation (i.e. perimeter control)?
	Yes	NO