Definitive care management in tactical situations

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed_________________________________________
Abstract

The problem is the City of Madison Fire Department puts paramedics, police officers, and citizenry alike at risk by not having a method of communicating patient care management needs during tactical emergency medical service (TEMS) incidents. The purpose of this research is to create a Standard Operating Guideline (SOG) for paramedics communicating patient care management needs during TEMS incidents. Action based research was performed after extensive literature review while at the National Emergency Training Center Learning Resource Center. In brief, this research revealed who is responsible for communications, what risks are presented, and what may hinder development and utilization of a SOG during a tactical emergency medical incident. Finally, some of the benefits of utilizing a TEMS specific communication SOG will be revealed. Data was collected via personal training and incident reviews, stakeholder and expert interviews, international journal research, study of quality service methods, case law study, and applied international and national standards. The research was conducted in person and online via the University of Wisconsin libraries. The results of this research alarmingly revealed myopic protective service representatives, customs, with a need to adopt, and utilize incident command strategies and creatively employ personnel to mitigate risk. It is the governing agency’s (City of Madison) responsibility to ensure methods of communication are available during TEMS events. Further, the use of a standardized medical template for every event must be utilized to ensure safe incident management, risk reduction, tactical efficiency, and records retention. In summary, this research resulted in a specific TEMS standard operating guideline proposal that emphasizes three specific personnel assignments: medical liaison/communicator, extraction/transport, and triage/treatment. Adherence to these recommendations is necessary for optimal medical care during every event.
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**Introduction**

The problem is the City of Madison Fire Department puts paramedics, police officers, and citizenry alike at risk, by not having a method of communicating patient care needs during tactical emergency medical service (TEMS) incidents. The purpose of this research is to create a Standard Operating Guideline for paramedics communicating patient care management needs during TEMS events. The objectives of the SWAT/TEMS team are safety, speed, and definitive patient care management, which will be alluded to throughout this research. Action Based research will be utilized. The research questions posed were 1. What entities are responsible for communication? 2. What patient care communications should be considered for patient care? 3. What risks are associated for not having a method to communicate patient needs? 4. What tactical emergency medical standard operating guidelines are utilized by comparable entities? 5. What considerations may hinder creation of a standard operating guideline for use during TEMS events? The research recommendations herein directly influence implementation of the Incident Command System (ICS), approaches to safety management and risk reduction, changes in departmental service delivery, training, as well as public education.

**Background and Significance**

Madison, Wisconsin lies within Dane County and has 68 square miles of land area, within which lies the State Capitol, University of Wisconsin, numerous high tech businesses, schools, and an assortment of other manufacturing, and recreational industries. Madison also has critical infrastructure such as Madison Gas and Electric headquarters, and power plants, State of Wisconsin Department of Transportation offices, various governmental agencies, emergency, private and public communication headquarters, nuclear reactor and research labs, with hospitals
all located in, or very near, the central isthmus city. Further, a high-speed passenger rail system is planned for development from Milwaukee, Wisconsin directly into the heart of downtown Madison. As of 2006, the latest recorded census report available, Madison has approximately 223,389 residents and while the University of Wisconsin estimates total enrolled students to provide an additional 42,000 plus residents (University of Wisconsin, 2009). As of year 2000, persons under 18 years old were 17.9%, persons over 65 years of age were 17.9%. Further, 84.0% were white, 5.8% black, American Indian and Alaskan Native 0.4%, Asian persons 5.8% and persons of Hispanic or Latino origin were 4.1%. A language other than English being spoken at home is 12.7%. 92.4% of persons 25 years or older are high school graduates, 48.2% of that same population has a bachelor’s degree or higher. In year 2000, there were an estimated 89,019 households with 2.19 persons per household. In 1999, the U.S. Census reported the median household income was $41,941 and 15.0% persons below the poverty line within Madison.

The City of Madison provides law enforcement, fire and emergency medical service to the municipal of Madison and mutual aid to surrounding jurisdictions. The University of Wisconsin-Madison has its own law enforcement and security divisions supplemented by Madison Police and Fire departments as well as the Dane County Sheriff’s Department. The 2009 Fire Department annual report states: “daily over 400,000 Madison metropolitan area residents are supported by the City of Madison Police and Fire Departments.” Madison is home to three hospitals and numerous health clinics. The University of Wisconsin-Madison Hospitals and Clinics is also home to a Level one Trauma Center and specific children’s hospital and burn center. The University of Wisconsin campus within Madison historically is a welcoming liberal, political activist, and progressive research community. Meanwhile, with diverse cultures and political views, it has experienced the riots associated with Vietnam in the 1960’s, bombing of
the University’s Sterling Hall, and has been identified as site for potential terrorist threats much due to the critical infrastructure.

The Madison Fire Department’s 2009 annual report announces the statement of purpose as:

“We are an innovative, nationally recognized fire department providing quality service to the City of Madison and surrounding areas. We are proud of the strength and diversity of our workforce and emphasize continuous service improvement, focusing on the preservation of life, property and the environment.”

The 2009 City of Madison Fire and Police Department’s Annual Report reveals increased response requests, fiscal conservancy and greater needs for diverse services. The fire department has an executive budget of approximately $40,640,849, operating with 12 fire stations, four ladder companies, 10 engine companies, and nine Advanced Life Support firefighter paramedic ambulances “rescues”, and one command vehicle, with over 360 employees. Fire department divisions include public education, fire investigation, fire inspection, fire suppression, and emergency medical services. Specialty teams include Hazardous Materials, Heavy Urban and Rescue, Lake Rescue, Rapid Intervention Team and Tactical Emergency Medics. In 2008, approximately 80% of emergency calls were responded to by MFD rescues for approximately 19,000 medical calls. Meanwhile, those numbers have been rising and average at least 52 medical calls per day. From 2007 through 2009 there have been averages of nine Tactical Emergency Medical Service team activations, with an average annual cost TEMS personnel premium cost of $5,055.00 as reported by Rich Kinkade, the Chief of EMS and Logistics Affairs. Further, approximately 205.06 hours of overtime pay totaling $8,615.27. Of that amount, only $2,797.33 was spent on training. In 2008, approximately $15,000 was awarded to the TEMS team from a private non-for-profit donor for equipment purchasing. Whereas, the
Madison Police Department SWAT team has been activated between 18-24 operations per year in the same time span. Thus, TEMS activations occur with roughly 50% of the SWAT activations. The Madison Police Department’s Mission Statement which is posted online at: 
www.cityofmadison.com/police/mission.cfm, is,

We, the members of the Madison Police Department, are committed to providing high quality police services that are accessible to all members of the community. We believe in the dignity of all people and respect individual and constitutional rights in fulfilling this mission.

Thus, for later discussion please note the elements of “quality” and “respect individual and constitutional rights in fulfilling this mission.”

In 2005, the City of Madison Police Department and the Madison Firefighter’s Local 311 Emergency Medical Service Committee developed a proposal and strategic plan for a Tactical Emergency Medical Support Program (TEMS). Ten firefighter paramedics are trained to the level of Experienced Provider by the American Heart Association, are State of Wisconsin Haz-Mat Technicians and have been trained in Incident Command System through ICS 100, ICS 200 and ICS 700. The Madison Fire Department TEMS is described as, “a group of specially trained paramedics deployed with the Madison Special Weapons and Tactics Team (SWAT).” Additionally therein, “TEMS medics are able to provide immediate medical care to an injured person at the “last point of cover” which means we are trained to move further into a given incident yet still be protected by the SWAT team (Madison Fire Department, 2010). Meanwhile, the City of Madison Police Department’s SWAT teams “primary objective is preservation of life” (Madison Police Department, 2010).
Both departments ascribe to the philosophy of Unified Command. Further, both departments understand that at any SWAT incident, the police department is the agency with the greatest resources employed and therefore have command. Unfortunately, during these incidents, while a representative from the fire department has been requested to act as a medical liaison in the Incident Command (IC) center, the fire department has not provided one. In fact, only two TEMS medics are activated for any SWAT incident. Then, the TEMS are deployed with the SWAT entry team. Intuitively, medics and police officers alike realize if medics are presented with patients, communicating the conditions, actions, and needs for definitive patient care management may not be possible. Specifically, the austere and rapidly changing high-risk environment for which the SWAT and TEMS were called to may not allow a safe environment where communication patient care management needs is possible. Unfortunately, to date, a critical component of communication is to have another entity who is the receiver of information or an observer that is able to relate information has not been realized. This critical component of definitive patient care management is the medical liaison role. This role can listen, answer, anticipate, coordinate, and act, based upon experience, skills, insight, pre-planning, and professional roles and responsibilities through formal authority. Yet, these roles and responsibilities have not been accounted for with personnel assignment or SOG development to date. The result is medics realize dysfunction, communication and capability barriers. After action training, incident, and the TEMS 2008 Executive Summary year-end reports, all cite this omission of staffing support. In fact, all TEMS personnel have documented the requests made for a medical liaison to be in the SWAT incident command center. Finally, in that year-end document, the medics have cited this as a critical communication and service deficiency needing resolution.
Stephen M.R. Covey has defined trust as the sum of credibility and competence in his book: *The Speed of Trust.* In the high-risk protective service arena of SWAT and TEMS performance in duty, professional trust is awarded only through actual successful tactical mission. I state this as a current Fire Lieutenant Paramedic, former TEMS medic, instructor, and former police officer, firearms and street survival instructor. This concept that a partner is there, whether tactically or medically to have your back and protect you is immeasurable. Moreover, trust is a measure of psychosocial support. Therefore, the absence of a medical liaison in the IC is a crack in that psychological cloak of security for one another. This consequently, weakens the team and the overall chain of success in pursuit of life safety. Ultimately, the incident management system’s modular organizational structure can never be fulfilled, if that medical liaison role and responsibilities are not addressed at every incident having a medical component.

To know ones job and perform that role to the best of their ability is not only expected, it is relied upon. It is known that pre-hospital emergency medicine is that paramount link in the chain of survival that must be as strong as possible to ensure optimal patient care. That chain of survival relies upon the relay of information, continuity of care, and early activations of support. All trauma and neurological surgeons, emergency physicians, and the full complement of support staff trust that pre-hospital emergency medical providers recognize that time is of the essence to improving patient survivability. The deceased Dr. Darren Bean, a University of Wisconsin Level 1 Trauma Center, Med-Flight physician, and Madison Medical Director 2006-2007, emphasized and trusted that TEMS actions and assessments would be expeditious and coordinated, while patient care management action and needs be communicated in advance to place the patient in the appropriate medical expert hands as soon as possible. What is more, citizens expect professional emergency care be provided immediately. (Sanders, 2001). They expect protective
service providers and incident commanders to have insight, experience and plan for worse case scenarios and act decisively. With this expectation in mind, and to fulfill proper definitive patient care management, the University of Wisconsin Level 1 Trauma emergency room staff have developed an incoming radio report flow sheet which the hospital utilize and follow when listening to rescue/pre-hospital emergency medical radio reports. (Refer to Appendix A.) These radio reports are categorized, and activation of proper emergency staff notified with specific personnel ranging from trauma, to pediatric, to burn, and neurological, or respiratory teams with equipment to be ready for immediate patient care management upon patient arrival. The American College of Surgeon Resources for Optimal Care of the Injured Patient requirements in 2006, yet updated 4/22/2010, for every Level 1 Trauma center include Chapter 2-2-7 (6-6): “It is expected that the trauma surgeon will be in the emergency department on patient arrival, with adequate notification from the field. The minimum acceptable response time is 15 minutes for Level I and II trauma centers…”).

For pre-hospital emergency medical providers, there are widely known protocols such as the “S.T.A.R.T. System of Simple Triage and Rapid Transport and the R.P.M. Respirations Perfusion Mental assessment” (Appendix B). Further, in the Madison Fire Department policies and procedures section 3.46 for managing emergency communications during fire incidents with the Rapid Intervention Team. The communications revolve around a firefighter in distress call and the communications of *conditions, actions, and needs* (CAN report) are clearly spelled out. Consequently, a formal notification indicates therein, who is responsible for what and how regarding communications during fire incidents (Appendix C). Yet, during TEMS events the CAN report is not possible as there is no support staff to complete either the effective communication, nor coordinate patient care management needs. Unfortunately, documented
requests for personnel to affect efficient communication in these high-risk situations has been recorded during monthly meetings from 2007-2009 where the then Chief of EMS and Logistics Affairs was present. (Williams, personal communication, 2009). He indicated that if a Madison Fire Department representative was needed during an actual TEMS event, the SWAT incident commander could call the Dane County Communications Center and request that one respond. The pragmatic practice and response to these requests, is evident in both the former and current Chiefs of EMS Logistics and Affairs remark that it is the position of the MFD command staff to have the practice that if a shooting should occur, then they will respond when notified. Madison Fire Department Chief of Personnel and EMS echoed this custom during an interview with this researcher in June of 2010, he confirms this deliberate course of action, which SWAT, and TEMS personnel should be well aware of:

This indifference has led to service, and risk reduction inadequacy. This was the case in May 2008 with the Weber/Hoyt park response in Madison where hours of unnecessary delay occurred and documentation of the incident is missing. This was a multi-agency, Madison Police, Fitchburg Police, University of Wisconsin Police, Federal Bureau of Investigation, Dane County Sheriff’s Department and other agencies deployment. There was a unified command structure in place, TEMS in the field, but no medical/M.F.D. liaison in the Incident Command. The disappointment, frustration, and embarrassment of lack of professional response resulted in a palpable breech in professional trust of the TEMS being able to perform and deliver when called upon. This researcher was present in the Incident Command facility during the event and made the following personal observations:  A break down occurred when a TEMS representative telephoned the on duty Fire Chief in charge of daily operations. The call was at the request of the SWAT Incident Commander and the City of Fitchburg Police Deputy Chief’s inquiry as the
case had originated in Fitchburg, WI. Although specific equipment and personnel were requested, that on duty Madison Fire Department O.I.C. sent other personnel without the requested equipment. The result was a fire engine with a Fire Lieutenant who spoke with on scene law enforcement entities, only to request the same equipment and personnel from the O.I.C. In fact, the lead Law Enforcement officer walked away from the initial fire officer and directed a subordinate to speak to that fire officer. This was witnessed by this researcher with comments of disbelief being heard from on scene law enforcement officials who were under time restraints to perform certain tasks. Subsequently, they communicated a request for the same equipment to respond into the City of Madison, recognizing the delays. It was only then, that the proper equipment was responded to and secured then transported to the scene for use by law enforcement personnel. The late arrival of equipment and personnel placed fire fighters, police officers and citizenry alike at risk due to environmental conditions. When this researcher regarding personnel support, resource delays, and documentation questioned the afore-mentioned Chief Officer, he remarked:

The police rarely know what they want. I do not recall the telephone call or the request and do not see a need for documentation or NIMS templates as I have run two alarm fires without spreadsheets or templates. I am old school. (Popovich, M., personal communication, Madison Fire station #1 June, 2010).

This then is a breakdown not only in communication, risk mitigation, record keeping, but also reflective of dysfunction perhaps stemming from a request without a perceived formal authority to make such a request. That element of organizational dysfunction is too great of an element to explore in this research due to time restrictions and the focus and purpose of this research. Thus, that element alone will be alluded to later, briefly as it may hinder creation and adoption of a TEMS specific S.O.G.
Deliberate indifference is the conscious practice performed by people with decisional capacity in control of people, resources, and services. It is often applied in civil suits where the United States Eighth Amendment is believed to be violated. Further, it has been applied to other situations where culpability may not necessarily be negligence, or malpractice, but where some may try to defend their actions based on decisional immunity claims. Professional application and utilization of incident command philosophies strategies and tactics at every event can minimize not only personal physical threats to police officers, medics and citizenry alike, but also all stakeholders, inclusive of the City of Madison as an entity itself. Author, Stephen R. Covey, writes in his son’s book, *The Speed of Trust*, “The synergistic effect of being trusted and giving trust unleashed a level of performance we had never experienced before….” Stephen R. Covey is referring to handing over a leadership role to his son and the profound advances and mergers that followed. Just as in the business world, trust relies upon communication and transparency. Thus, Unified Command and emergency service agencies need to trust that communication will be respected and acted upon for optimal service. Just as important is the concept of transparency, which is a common theme in business discussions recently. Merriam Webster’s Collegiate Dictionary, tenth edition defines “transparency” as: “1: the quality or state of being transparent.” Further, transparent is defined as:  

**a**: free from pretense or deceit: FRANK  

**b**: easily detected or seen through: OBVIOUS  

**c**: readily understood.” (Merriam Webster’s Collegiate Dictionary, p. 1255) Transparency then is a theme, which must be sought in order to gain insight, fulfill duties and responsibilities and anticipate the needs of others to gain peak performance through collaboration in every realm. In essence, that is why standard operating guidelines are developed, implemented and followed.
Transparency is found in the lacking of a communication Standard Operating Guideline and the appropriate personnel and staffing to carry out the TEMS and SWAT mission of life preservation. Not only is it understood by SWAT and TEMS personnel that a medical liaison could assist in communicating patient care considerations to the tactical commander, but what is more, is that the liaison could coordinate extraction methods whether land, ground or air support is utilized, as well as notifying the Level 1 Trauma Center of the nature of the injury and patient. The University of Wisconsin Trauma Center has published a schedule of early notification injury and patient types they would like to have categorized so that appropriate staff and support can be mobilized as time delays may affect quality patient care, which mentioned above, is memorized by most experienced TEMS personnel. University of Wisconsin Level 1 Trauma Center charge nurses, and Clinical Nurse Specialist Jayne McGrath devised the “trauma activation chart” (Appendix A), though Ms. McGrath admits “most charge nurses have it memorized and don’t need to refer to it.” Ms. McGrath goes on to state:” it is more of a reminder to those additional staff called into the Emergency Room during peak periods as we try to minimize all delays in patient care.” (J. McGrath, personal communication, April, 2010). University of Wisconsin Level 1 Trauma Center Charge Nurse Jane Elmer echoes McGrath stating: “when we get a call from medics we need clear and concise patient care reports.” As soon as I have any activation criteria met, I am on the telephone calling the appropriate staff with hopes of them meeting the patient at the door.” (J. Elmer April, personal communication, 2010.) The trauma center trust emergency pre-hospital medical providers to treat triage and transport as expediently as possible for positive patient outcomes. (Refer to appendix D.) Without trust, a certain fleecing is introduced threatening police, medics, citizenry and stakeholders alike. Under the Unified Command structure, the medical component is understood to be the responsibility of the
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Madison Fire Department. Thus, SWAT handles the tactical aspect of the mission and trusts the expertise of the medical staff to know their job and perform their duties. Unfortunately, there is an inherent weakness in the SWAT/TEMS organizational design and service as the method of communication and the medical liaison component are absent.

To address this weakness, creative staffing, standard operating guidelines and adherence to FEMA’s recommendations of Incident Command structure must be performed. The results will prove risk reduction through emergency response strategies, planning, preparedness and training. Adoption of the SOG will improve TEMS capability for incident decision making, advocate a culture of trust enhancing emergency safety responder safety and survivability, and incident reporting. Further, enhance the professionalism of the TEMS members and emergency service leaders, while maintaining a positive work environment that ensures the SWAT and TEMS well-being and productivity.

**Literature Review**

To illustrate the magnitude of this organizational design and service delivery flaw affecting the life safety of police officers, firefighter paramedics and citizenry alike, a brief explanation of organizational theory and design must be performed. This discussion shall be brief, yet broad forming a foundation building to the narrow essence of quality service deployment in unified command. Neither unified, incident command, nor medical treatment procedures will be discussed at length herein as much research, publication and training has already taken place with the intended audience. However, common organizational elements of incident management systems and themes will be illustrated.
Statistical thinking as the philosophy of learning and action based on fundamental principles will occur. It is the author’s intent that the reader understands the remarks of Britz, Emerling, Hare, Hoerl, and Shade (1997) as they write: “All work occurs in a system of interconnected processes. Variation (military, law enforcement, diverse communities and environments) exists in all processes. Understanding and reducing variation are keys to success.” (Britz, Emerling, Hare, Hoerl, and Shade 1997). Moreover, when thinking about form and function, we should discuss foundations in protective services.

An organization, by its most basic definition, is an assembly of people working together to achieve common objectives through a division of labor. Ultimately, the organization that excels at processing information facilitates learning and the development of new knowledge. Other models of organizations focus on traits such as power and subordination, culture and adaption, and efficiency.” (Britz et al., 1997).

Examples of organizational foundations are both law enforcement and fire service professions with structured, strict hierarchy, and modular specialized groups that operate often independently or as teams for efficiency such as with SWAT and TEMS. To further, explore the foundation of unified command and the relation of SWAT and TEMS, a look to the early 1900s and Henri Fayol whose functional approach to management defined five functions: planning, organizing, commanding, coordinating and controlling. While Fayol is recognized as the forefather to the functional approach to management, his theory was the impetus for further discussion to this date. Most functions are known to revolve around four common management themes that were rooted in Fayol’s theory. Specifically, “planning, organizing, leading, and controlling.” (Mote, D. (no date)). In brief, these four themes are evident even in the form of the National Fire Service Incident Management System model procedures as a modular organizational design around functions.
The National Fire Service Incident Management System Model Procedures Guide for Structural Firefighting (MPG) second edition indicates a Unified Command shall be utilized when: “The incident is totally contained within a single jurisdiction, but more than one department or agency shares management responsibility due to the nature of the incident or the kinds of resources required.” (National Fire Service Incident Management System Consortium Model Procedures Committee, 2000). Further, consider Fayol's four points and compare: “The Incident Management System (IMS) provides for a systematic development of a complete, functional command organization. It is designed for single or multiagency use and its use increases the effectiveness of Command and firefighter safety.” (National Fire Service Incident Management System Consortium Model Procedures Committee, 2000). Therefore, while both the Madison Police and the Madison Fire Departments indicate they follow Unified Command philosophies, it is not practiced in the case of SWAT/TEMS as the Fire Department is not providing the critical span of control element of a medical liaison in the IC. Recall many business and theorist agree that the optimal span of control in management scenarios is anywhere from 3-7 personnel. In fact, on page 30, in the same MPG text in regards to incident command and personnel management it is written: “The number of resources that can be effectively managed by the IC varies. Normal span of control is three to seven. In fast-moving complex operations, a span of control of no more than five… is recommended.” Whereas, in the City of Madison Fire Department Policy and Procedure manual bulletin number 3.3, on pages 9 of 26, it clearly states: “In general the manageable span of control of any individual of management responsibility should range from three to seven with five being ideal.” Strikingly, during every SWAT/TEMS incident from 2007-2009 the average SWAT representatives were averaged as: three SWAT supervisors in the IC with one designated as command, 14 entry officers with the
potential of two leaders, eight scouts and five snipers with two TEMS that would make entry to
the last point of cover with the entry team. Consequently, the ability to achieve mission and
operational goals safely was at risk when compared to common successful organizational theory
and incident command strategies. The inherent transparency in SWAT/TEMS organizational
and deployment planning reveals increased life safety risk and potential for service deficiencies
due to inadequate proportional adherence to span of control recommendations.

J.M. Juran a forefather of planning for quality in the business world writes:

Numerous specific quality crisis and problems have been traced to the way which quality
was planned in the first place. In a sense, we planned it that way. There is no implication
that the planners were incompetent, malicious, or otherwise deficient. (Juran, 1992).

In brief, Juran believes to provide the best product or service possible all stakeholder/shareholder
needs must be met. Additionally, planning for optimal outcomes must be done from the start and
that planning must be flexible and ongoing to achieve continuous quality in service deployment.
These sentiments reflect the environment of the Madison SWAT and TEMS team as in the 2005
Police and EMS proposal they stated they would begin with a certain deployment structure with
ongoing evaluation. Since that time, staffing, training and deployment issues have surrounded
the TEMS/SWAT team. Although Police tactically have a planned response structure and
manageable span of control, training and after incident reports from TEMS reveal profound
weaknesses which threaten not only team uniformity, quality of service, but more importantly
optimal patient care. TEMS personnel can only plan to a certain level of performance as key
components to service continuity are lacking. Specifically, there is neither medical liaison nor
TEMS specific patient care management SOG. These are particularly necessary as the manner
of TEMS service is in stark contrast to the normal emergency medical service methods of
Madison Fire Department’s day-to-day prehospital emergency medical service. This level is substandard, and beneath emergency care, National Incident Management standards.

Planning for business is relative and transferable to the delivery of any emergency service and quality must be addressed while continuously re-evaluated in the pre-planning, deployment and after incident events. Merriam Webster’s Collegiate Dictionary tenth edition defines “quality assurance” as: “n (1982): a program for systematic monitoring of the various aspects of a project, service, or facility to ensure that standards of quality are being met.” Those standards in the case of the SWAT/TEMS team are tactical mission objectives for law enforcement (not to be discussed in this forum) and the roles and responsibilities of the TEMS team.

The Madison Police Special Weapons and Tactics Team (SWAT) and the Madison Fire Department Tactical Emergency Medical Service team (TEMS) face unique and challenging management and deployment issues. Although each are a department service within the City of Madison, services, budgets, personnel and equipment available are separate. Kathy R. Rinnert, MD, MPH and William L. Hall II, MD state in their article titled, “Tactical emergency medical support” in the Journal of Emergency Medicine Clinics of North America, that: “In 1999, 42 law enforcement officers were killed and 55,026 were injured by assaults in the line of duty.” Further, when writing about high-risk incidents with SWAT teams: “the morbidity and mortality of law enforcement officers, perpetrators and innocent citizens and bystanders are increased.” Moreover, “Members of SWAT teams are at increased risk of injury, with 33 injuries per 1000 officer-missions”. (Rinnert, Hall, 2002). They cite that statistic from Casualty Care Research Center counter narcotics and terrorism operational medical support medical director’s course handbook. Second edition. Bethesda, MD: Casualty Care Research Center. That statistic is cited
throughout research articles considering increased risk for injuries during SWAT incidents.

This increased risk for great bodily harm due to high-risk criminals and activity with assault type
weapons on behalf of both the perpetrators and police dictate a different method of pre-hospital
emergency medical service if morbidity and mortality is to be decreased.

In fact, Rinnert and Hall go on to state:

Medical care providers must have an understanding of, and consider, law enforcement
tactics and mission-specific objectives when planning and providing medical support.
Traditional EMS practice is inadequate to meet the unique situational, logistic, and
austere elements of the tactical environment. (Rinnert, Hall, 2002.)

Paramount to this discussion and planning for these events are the well-known fact as
mentioned again by Rinnert and Hall:

Both the military and civilian medical literature describes a need for immediate, life-
saving medical interventions, especially in the case of penetrating trauma. Twenty
percent of persons fatally wounded by penetrating trauma die from readily treatable
causes, including tension pneumothorax (10%), exsanguinating peripheral hemorrhage
(9%), and airway obstruction (1%). Because 15% of those fatal die within 30 minutes of
wounding, time is paramount. The close proximity of tactically proficient medical
personnel, timely applications of appropriate stabilizing treatment and expedient
evacuation to the closest appropriate medical facility are among the many factors that
may maximize the survival rate of those injured.” (Rinnert, Hall, 2002)

Thus, as medical professionals are planning for care during SWAT events, certain
systems and goals must be considered in every stage of the event. The plan must be done right
the first time with flexibility and support focusing on service quality and achieving those
professional goals of communication, treatment, extraction and transport. Ultimately, it is the
City of Madison’s responsibility to provide appropriate funding, support, and training for
Madison Fire TEMS personnel.
The City of Madison citizenry, stakeholders, police officers, paramedics and hospital emergency service providers all expect professional service and high performance. They are after all, the customers we all serve, whether as part of the team or not. Lewis and Booms, were cited in “A conceptual model of service quality and its implications for future research article as asserting: ‘Service quality is a measure of how well the service level delivered matches customer expectations.’ (Parasuraman, A., Zeithaml, V., Berry, L. 1985). Likewise, the SWAT team expects the TEMS team to handle all EMS patient care management details including communications, care and transport. This in fact, is known to be the roles and responsibilities of the Madison Fire Department on a daily basis as depicted in the City of Madison service organizational departmental form and function as well as noted in the annual reports. Madison SWAT leaders have asked for assistance in the Incident Command center, but rarely receive support during actual tactical events. In fact, the current Chief of EMS Logistics and Affairs mentioned during a telephone interview on July 17, 2010 that he has been asked numerous times by Madison Police SWAT officers to provide assistance in the IC. His remarks were that he does not understand why in the past Chief Officers have not responded to the call-ups, but that he would like to, but does not get the same desire from the rest of the command staff.

There are relative and transferable philosophies of quality business applications to the service industry, of which SWAT and TEMS are a part of being that they are in the protective service realms. The inherent delays of coordinating and staffing for communication emergencies must be planned for and managed to achieve optimal patient care management.

In order to determine the best TEMS form and function, use of “Quality Function Deployment” (QFD) strategies should be implemented. The minimal stakeholders to be considered are citizenry, SWAT, TEMS, and hospital emergency staff.
Ermer (1995) maintained the following:

QFD is a quality improvement methodology that is based on obtaining customers’ input by directly interviewing them. It is a design tool that matches customers’ requirements with the necessary corresponding system design elements. This structured approach gives increased focus and resolution to understanding customers’ requirements.

This is in effect systems thinking. FEMA’s medical operational plan template form #206 (Refer to appendix E) is a foundation template that addresses each of these elements when utilized by a medical control or liaison. TEMS planning and service delivery can mirror image QFD through use of systems thinking and strategies employed through Unified Command structures. Further, to utilize the Incident Command structure and templates at every call up to reduce variations as W. Edwards Deming suggest in his 14 points of success in his book *Out of the Crisis*. Specifically, Fire administrators for TEMS should: “Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.” (Deming, 1982) The result should be adherence to planning and staffing in compliance with NFPA and incident management system expectations and the requests from SWAT and TEMS personnel. Furthermore, Paul J.H. Shoemaker author of “Scenario Planning: A tool for strategic thinking” has relative and transferable planning as deployment strategies to be considered for any SWAT/TEMS event. He suggests three classes of knowledge must be realized:

1. Things we know. 2. Things we know we do not know. 3. Things we don’t know we don’t know.” He continues, “Various biases - overconfidence, under and over prediction, the tendency to look for confirming evidence – plague all three, but the greatest havoc is caused by the third. (Shoemaker, 1995.)

With these considerations Madison TEMS must not only recognize that they are part of the SWAT team, but realize that while within any environment, without a medical liaison in the Incident Command, at any given moment things could arise beyond the police IC’s control.
needless to say also out of control of the TEMS medics with the entry team. A Madison Fire Chief Officer responding from a secondary location would simply introduce greater inherent delays and affect lower than optimal patient care communication and coordination. Thus, dedication of not only a Fire Department Policy to the Incident Command strategy, but also adoption of same to the TEMS specific environments can affect positive patient care management and overall tactical mission success.

Dr. Yoji Akao developed Quality Function Deployment as a way to deploy manufacturing processes with continuous process monitoring and control matrices. The matrix, became known as the “House of Quality” and was intended to set a template which when shareholders and stakeholders identified threats to production quality, responses and changes could be made in real time. Juran distinguishes quality planning from quality control stating: “Quality planning deals with setting goals and establishing the means required to reach those goals. Quality control deals more with execution of plans-conducting operations so as to meet those goals.” (Juran, 1993). W. Edwards Deming creator of the Total Quality Management (TQM) movement in the United States has 14 points of quality that are drawn from his book: Out of the Crisis. The number 9 point of quality is: “Break down barriers between departments”. (Deming, 1982) Another idea central to TQM is the concept of the “internal customer”, that each department serves not the management, but the other departments…. (Deming, 1982 p. 24.) This illustrates the importance of collaboration among departments, personnel and support services in order to achieve the greatest mission and individual success potential. Thus, no matter whose departmental budget provides financial support for personnel staffing, quality services comes from teamwork. As Deming (1982) relates: “The responsibility of supervisors must be changed from sheer numbers to quality.”
The 2004 National Fire Protection Association (NFPA) 1710 standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public and Career Fire Departments remarks regarding the standards within it: “Most importantly, it provides the body politic and the citizens a true picture of the risks in their community and the fire department’s capabilities to respond to and manage those risks”. (NFPA, 2004). Thus, adherence to these standards should afford transparency and increase the public trust in protective emergency service capabilities and professionalism.

Further, the Special Operations section, NFPA 1710-7 4.4.1, addresses various aspects of fire department organizational structure directing it to: “set forth the criteria for the various types of special operations response and mitigation activities to which the fire department is required and/or expected to respond.” Within that same document, the Emergency Medical Service section 4.3.2 states: “The fire department organizational statement shall ensure that the fire department’s emergency medical response capability includes personnel, equipment, and resources to deploy at the first responder level with automatic external defibrillator (AED) or higher level treatment.” (NFPA 1710, 2004)

The State of Wisconsin Department of Commerce Chapter Comm 30 for Fire Department Safety and Health Standards purpose: “is to establish minimum safety and health standards for public sector fire department employees.” (Wisconsin Department of Commerce Comm. 30, 2002). Comm 30.14 Emergency operations follow the Federal Emergency Management Guidelines of incident command. Of particular note, every fire department shall:

Conduct emergency operations and other hazardous situations, including training exercises, in a manner to recognize hazards and to prevent accidents and injuries.” (b) Establish an incident command system, which has written guidelines applying to all firefighters, involved in emergency operations and which identifies fire
Definitive care management in tactical situations

Even more, “at an emergency operation where special hazards exist, require the officer in command to assign qualified personnel with specific responsibility to identify and evaluate hazards and to provide fire fighter safety during the operation.” (Comm. 30.14. 1 [g]). Within Comm 30.14 (2), the incident safety requirements state specifically: “(a) every fire department shall: 1. Provide sufficient personnel to safely conduct emergency scene operations and limit such operations to those that can be safely performed by personnel available at the scene.” Additionally, “2. If inexperienced fire fighters are working at an emergency operation, provide direct supervision by more experienced officers or members.” (Wisconsin Administrative Code Commerce, 2002).

Meanwhile, the National Tactical Officers Association (NTOA) is considered a consortium of experts specifically for SWAT and TEMS teams, and has posted a position statement regarding the: Inclusion of tactical emergency medical support (TEMS) in tactical law enforcement operations. (Appendix F.) While the entire document shall be regarded as a standard for Madison Fire fighter paramedics working in the SWAT/TEMS team, there are a few points that must be cited in this research. Of particular note:

TEMS providers should undergo a formal training program in supporting law enforcement operations and trained providers should be required to undergo periodic retraining and skills reviews. This training should include, but not be limited to, tactical methods, techniques, equipment, tactical casualty care, and casualty extraction.” (NTOA, 2010).

Further, in the Position Statement point six reads: “TEMS personnel should operate under written policies and procedures that address the selection and training of TEMS personnel, the
Chain of tactical medical command, and operational guidelines.” Ultimately, NTOA recommends:

TEMS providers should serve as the consultants to commanders on matters of team health and safety and serve as a liaison between law enforcement operations and local health care providers. Further, the duties of the TEMS provider may also include nutrition, safety issues, and maintenance of team health records, including immunizations. (NTOA, 2010.)

It is well understood by NTOA, that TEMS personnel should be Advanced Care Life Support (ACLS) trained and the standard of that training is the American Heart Association biannual ACLS certification. The Madison fire fighter paramedics have the ACLS-Experienced Provider certification, which is a higher-level training and practice certificate. However, MFD TEMS lack adherence to the aforementioned NTOA recommendations.

The American Heart Association (AHA) is an organization that provides medical standard of care guidelines and training in North America. An important part of the AHA guidelines from first responder through Advanced Trauma Life Support training, is the concept of the “Chain of Survival”. The applied strategies are: early notification to emergency providers for additional support (Call 911), early stabilizing interventions (CPR and AED), early advanced care life support. (AHA Instructors Manual, 2000). Science has proven the chain of survival increases patient likelihood or survivability from life threatening disease. Building upon these basic concepts the American College of Surgeons Committee on Trauma provides training for physicians titled: Advanced Trauma Life Support for Doctors (ATLS). The need for this training has evolved recently as trauma and pre-hospital case studies reveal “The need …for sustained aggressive efforts to prevent injuries is as great now as it has ever been.” (Acker, J., Ali, J., Aprahamian, C., Bell, R., Boyle, D., Collicott, P. & et al (2004). Within that course, a trimodal death distribution is discussed.
Death due to injury occurs in 1 of 3 time periods or peaks. “The first peak occurs within seconds to minutes of injury. During this early period, deaths generally result from apnea due to severe brain or high spinal cord injury; or rupture of the heart, aorta, or other large vessels. Very few of these patients can be salvaged due to the severity of their injuries. Only prevention can significantly reduce this peak of trauma-related deaths. (Acker, J., Ali, J., Aprahamian, C., Bell, R., Boyle, D., Collicott, P. & et al, 2004).

The tactical environment of TEMS demands skill, accuracy and speed. To assist the medics with the entry team in quality mission deployment, use of the S.T.A.R.T. triage and R.P.M. assessment tools greatly assist medics in service during the first peak period of trauma. It is during this period that a medic with the entry team could triage, treat and provide a CAN report. If successful life saving measures can be employed, a patient may be stabilized and thus be categorized in the second peak period of possible death.

The second peak occurs within minutes to several hours following injury. Deaths occurring during this period are usually due to subdural and epidural hematomas, hemopneumothorax, punctured spleen, lacerations of the liver, pelvic fractures, and/or other multiple injuries associated with significant blood loss. (Acker, J., et al, 2004).

However, this period enters into the golden hour of care and is characterized by the need for rapid assessment and resuscitation, “which are the fundamental principles of Advanced Trauma Life Support”. (Acker, J., et al, 2004). It is during this second peak period where the CAN report is communicated tactically, patient stabilization, and extrication measures take place. With transport coordinated and completed to the appropriate hospital. This leads to the third period of traumatic death, death that occurs in hospitals.

The third peak, which occurs several days to weeks after the initial injury, is most often due to sepsis and multiple organ dysfunction. Care provided during each of the preceding periods impacts on patient outcome during this stage. The first and every subsequent person to care for the injured patient have a direct effect on long-term outcome. (Acker, J., et al, 2004).
Thus, it is imperative to have TEMS personnel with entry team and support SWAT/TEMS with additional personnel committed to patient care management, extraction, and a medical liaison focusing on coordination and communication.

While the United States Army has deployed a small Forward Surgical Team (FST) during military offenses, the primary role is to provide surgical support to stabilize patients to be capable of transport to a more capable medical facility. The aim is to minimize the golden hour and extraction time, and increase survivability where deaths would have previously occurred due to delays similar to those aforementioned that caused deaths in the ATLS peak 2 populations. In April 2006, Harry Stinger and Robert Rush discussed Army forward surgical teams (FST) mission, shortcomings and “personnel and material acquisition recommendations”. Stinger and Rush go on to write: “The mission of the Army FST is to deploy lifesaving operating room capability forward to the FSMC in the brigade support area (BSA) to save lives of casualties whose injuries are so severe that they would not survive transport…” In contrast to MPD SWAT and MFD TEMS, Army FST teams can do surgery in the field and do provide for patient stabilization for transport to a better equipped hospital.

The ARMY FST consists of ten officers and ten enlisted personnel. The four assigned doctors are operating surgeons, i.e. three general trauma surgeons and an orthopedic surgeon. There are two certified registered nurse anesthetists, three additional nurses and one operations officer, as well as enlisted operating room technicians, practical nurses, and combat medics. (Rush, Stinger, 2006)

They go on to state:

A FST is not a hospital. A hospital must have depth in personnel and equipment to function independently.” However, “The FST contains the minimum of personnel and equipment necessary to perform 30 lifesaving operations in 72 hours, in support of a major offensive in a combat theater of operations. (Rush, Stinger, 2006)
While, Madison SWAT officers are armed and ready to engage in military type force environments due to the austere, high risk and levels of threat to life safety, MFD TEMS are not. This unfortunately seems to be a common trend.

Remarks from the Journal of Trauma: Injury, Infection, and Critical Care and the Departments of Surgery and Emergency Medical Services, UMDNJ-New Jersey Medical School and the New Jersey Trauma Center-University Hospital Newark, and the Federal Bureau of Investigation (M.A.C.), provide the impetus for TEMS early assessment, care, extraction and transport. Specifically:

Timely intervention and access to a trauma center has been shown to decrease death and disability after major injury. The need for early, on-scene treatment and access into the trauma care system was demonstrated by the United States military. Since the late 1980s, medical support has been recognized as a vital aspect of SWAT teams. Recent incidents in the United States…, which resulted in both civilian and law enforcement casualties, further underscore the need for an integrated emergency medical service response to tactical operations.

Moreover, the most common problem encountered in providing tactical medical support is the lack of familiarity of LE personnel with the medical resources in their community and a similar ignorance of the needs of law enforcement with respect to the medical community. (Lavery, R., Addis, M., Doran, J., Corrice, Mark., Tortella, B. Livingston, D 2000).

Recall, at every SWAT/TEMS incident there may be over 30 police officers operating in different capacities from entry team, to scout, sniper and in the IC. However, there are only two TEMS medics and they deploy with the entry team. Consequently, MFD TEMS are in stark contrast to the Army FST teams and do not do surgery in the field.

The following remarks come from a prospective cohort study at a level 1 hospital in eastern Switzerland. The original research by Joseph J. Osterwalder, MD, MPH was published November 4, 2002 in the Journal of Prehospital and Disaster Medicine.
In North America, an important determining factor of an efficient trauma system is considered to be adherence to minimal rescue periods and direct admission to and treatment in a tertiary trauma center. By instituting aggressive and definitive measures within the first hour of the accident to preserve vital functions, observing the golden hour of shock aims to prevent both early and partially late death. Therefore, some North American Trauma Surgeons are of the opinion that field stabilization contributes to reducing mortality only if it does not prolong the on-scene time or if the patient would die without immediate intervention.

Intuitively, MFD should recognize the incomplete method of communicating and managing potential patient care management needs during TEMS events. The framework is written down in the form of policies, codes and standards, yet estimating the efficiency of current practice appear to be lacking analysis and comprehension of risk.

Gregory Swanson, a Federal Bureau of Investigations Incident Based reporting supervisor of data analysis indicates there are no data available for specific injury type during SWAT specific events. (Personal email 7/2010). Likewise, Joseph J. Osterwalder indicated, there are no available data that can be used for determining the best rescue periods, i.e. the on-scene time and the entire elapsed time between the accident and arrival at the trauma center (rescue period), for penetrating and blunt trauma. (Osterwalder, 2002).

In fact, Osterwalder’s study of the “Golden Hour” of shock and extending it rests on environments where the injury occur and in the trauma system location. Where “emergency physicians are often deployed, that the golden hour of shock can be extended safely in many blunt trauma patients.” (Osterwalder, 2002). However, the OPALS Major Trauma Study: impact of advanced life support on survival and morbidity revealed in their Ontario, Canada study “that system wide implementation of full advanced life-support programs did not decrease mortality or morbidity for major trauma patients”. (Stiell, I., Nesbitt, L., Pickett, W., Munkley, D., Spaite, D., Banek, J.,…Wells, G., 2008). They further define trauma sustained as that similar to injuries that may be encountered during SWAT/TEMS event as: “life-or-limb threatening injury due to blunt
force, penetrating injury or burn injury.” Subsequently, “there are concerns that the on scene
time spent providing advanced life support measures may actually delay life-saving expeditious
transfer to the hospital and the operating room.” (Stiell, I., et al, 2008). Thus, underscoring the
need for rapid extraction and patient care management coordination with transport to the
appropriate hospital.

Unfortunately, the custom and current position of the Madison Fire Department
administrative Chief Officers was captured in the brief remarks from an interview of the Chief of
Personnel and EMS Affairs, Jim Keiken during a personal conversation regarding this research
when he remarked: “The SWAT/TEMS team does operate under the unified command structure
in that we (administrative M.F.D. Chief Officers) will respond to the scene to expand medical
care needs if requested.” He further asserts that the TEMS team is responsible for
communication and coordination of patient care needs during TEMS events.” (April 23, 2010
11:40 a.m. Fire station 12, Madison, WI). However, Division Chief of EMS and Logistic Affairs
Rich Kinkade, (personal communication, July, 2010) remarked that he has requested additional
personnel and Chief Officers be present at every call-up, but was told by other Chief officers that
they did not want to respond to such incidents. Meanwhile, Christian Zuver MD, FACEP of the
University of Wisconsin Level 1 Trauma Center, emergency room physician and the Medical
Director for the City of Madison Fire Department and Dane County Wisconsin Advanced Life
Support system maintains:

In regards to blunt and penetrating trauma U.W. trauma surgeons have directed me to
write into the medical protocols” so that all paramedics fully understand the importance
and minimize on scene time where trauma occurred to transport to hospital to a maximum
of 15 minutes. (C. Zuver July, 2010.)
Further, he remarks as early as possible notification to the trauma center should be made to assist in deploying proper neurology, pediatric, burn and trauma surgery teams to the emergency room. While this should be intuitive, he has recently drafted a new “Radio Report Format” with triage categories to assist in communication and coordination that will be communicated throughout the entire ALS system. (Appendix G.)

The shootings at the Virginia Technical College on April 16, 2007 marked a critical date in emergency medical response during tactical incidents. The report from the Virginia Tech Review Panel, provides a transparent view of risks associated when incidents are critiqued. The Chapter IX. EMS Response, had post incident questions to determine specifically:


While the Virginia Tech case was shared at length with M.F.D. TEMS personnel as a case review, many TEMS members have continuously asked for additional personnel support in the Incident Command Center as evident in the TEMS 2008 year-end report. The Administrative, Training and Equipment Chairs findings and recommendations in that document, was provided directly to then Chief of EMS and Logistics Affairs Jeff Duppler. While no additional staffing or support during TEMS incidents have been provided, it is possible that should a traumatic incident occur a civil suit could be brought against the City of Madison similar to that of the case in the Columbine High School shooting, April 20, 1999. Essentially, an extension of the Eighth Amendment and “deliberate indifference” was filed against the Colorado school district. The Federal Judge, Lewis T. Babcock, denied the Sheriff’s Department
immunity plea in the claim against the State of Colorado and further set forth a decision allowing a civil suit against them in the death of Sanders who bled to death during the Sheriff’s delay in patient triage, treatment, extraction and management. These remarks are in summation after review of civil case No. 00-B-791 in the United States District Court for the District of Colorado. This case was on behalf of William David Sanders who was shot in the Columbine shooting incident. (Sanders, 2001). Thus, planning and staffing for rapid modular expansion of a SWAT/TEMS patient care management needs, may protect administrators from civil suits.

Cornell University Law School Legal Information Institute provides a discussion with case law surrounding the Eight Amendment in regards to Farmer v. Brennan, 511 U.S. 825 (1994). In that case, points of question were: “actual knowledge”, “officials duty under the Eight Amendment”, “deliberate indifference”, and “subjective recklessness”. In their discussion, they write: “Deliberate indifference entails something more than negligence, but is satisfied by something less than acts or omissions for the very purpose of causing harm or with knowledge that harm will result.” (Farmer v. Brennan, 511 U.S. 825 (1994). Noteworthy, MFD administration has been notified as a matter of record for optimal TEMS mission capability and risk reduction to staff a medical liaison in the I.C. during all events. A further discussion of deliberate indifference and civil liability under 42 U.S.C. 1983, comes from Gavin Justiss in his article: “Deliberate Indifference Under S.S. 1983: Do the Courts Really Care?” He writes the landmark decision, Monroe v. Pape:

the Court determined that the purpose of the legislation was, and still is, to enforce the rights guaranteed by the United States Constitution-most notably, the provisions of the Fourteenth Amendment. 2. Section 1983 allows a person to recover damages from an actor who, under the color of state or local law, causes a deprivation of any of that person’s guaranteed constitutional rights. (Justiss, 2009)
Thus, it is easy to see the risk to civil liability in the delay in waiting for a MFD administrator to respond and act as a medical liaison in the SWAT I.C. may cause inherent patient care management delays, and result in less than optimal mission performance.

“Litigation mitigation: Proactive risk management in the wake of the West Warwick club fire” by William C. Nicholson, JD *Journal of Emergency Management*, addresses several similar protective and public service concerns as mentioned in cases such as Columbine, Virginia Tech, etc. Suggestions that the responsible party, “ran a slipshod operation on a shoestring budget which led them to take shortcuts.” Further, the fire inspector “had a duty to be diligent.”

Nicholson further asserts:

> Failure to comply with a duty when that failure is the legal cause of harm will result in liability. Knowing one’s duty and still not changing one’s approach to conform to that duty may result in a higher level of blame. A court may find conduct in these circumstances to be grossly negligent or egregious. These levels of fault can result in overcoming immunities that might otherwise protect the conduct of units of government and their employees. (Nicholson, 2003)

One such immunity plea is that of discretionary immunity of discussed amongst city and county protective service officers. On February 19, 2009 Mark Rauch, CIS General Counsel posted an article on the internet titled: “Discretionary Immunity: Making it work”. He discusses the Oregon Tort Claims Act, which in substance and application is similar in Wisconsin. He states, public bodies are immune from liability for: “Any claim based upon the performance of or the failure to exercise or perform a discretionary function or duty, whether or not the discretion is abused.” (Rauch, 2009). Reasoning similar to this may be why Madison Fire Department officials deem it acceptable to take the position they have of not providing a medical liaison/support for SWAT/TEMS events. However, he goes on to discuss some key cases regarding position of discretionary immunity. Among those:
1. Discretionary immunity defense requires evidence regarding actual consideration process by which decision was reached. (Sande v City of Portland, 185 Or App 262 [2002]) 2. A discretionary action requires the exercise of judgment involving public policy as opposed to the mere implementation of a judgment made by others… (Ramirez v Hawaii T and S Enterprises, Inc., 179 Or App 416 [2002]) 3. Where a public body exercises consideration of alternate methods of fulfilling non-discretionary duty to act, the public body is immune from liability for failure to make discretionary choice among alternatives before injury occurred. Miller v Grants Pass Irrigation District, 297 Or 312 (1984). (Rauch, 2009)

He further indicates: “To qualify for discretionary immunity, public body must showed that it made a decision involving the making of policy, as opposed to a routine decision made by employees in the course of their day to day activities. Vokoun v Lake Oswego, 335 Or 19 (2002). (p. 14, 15, 16.)” (Rauch, 2009).

Discretionary immunity may not protect Madison Fire Department administrators from civil liability if suits are brought against them for a claim where the United States of America Eighth Amendment of the United States Constitution has been violated by their deliberate indifference to take actions to protect a petitioner’s safety.

“In a civil rights claim, the court’s key inquiry is whether a medical professional acted with deliberate indifference.” (Vogt, R.P., 2000). To resolve this issue of supplying personnel support, standard operating guidelines and training for TEMS personnel, a further review of deliberate indifference and liability for failure to train must be reviewed. Martin J. King, author of the article: “Deliberate indifference: liability for failure to train”, published in *The FBI Law Enforcement Bulletin* October 1, 2005, writes: “Deliberate indifference is a standard of fault that requires a showing that governmental policy makers acted with conscious disregard for the obvious consequences of their actions.” The discussion of policy and training consequences revolves around law enforcement and their training or lack thereof, as he mentions that: “An
adequate written policy or a practice that is not unconstitutional itself but which reflects deliberate indifference to persons’ constitutional rights because of the deficiency causes officers to violate constitutional rights.” The deficiency in the MFD Incident Command policy is that as a matter or practice, no TEMS personnel or MFD representative acts as a medical liaison during TEMS events. Thus, the standard of care and expectation for patient care management continuity is at risk. Consequently, FEMA, NTOA and even M.F.D. etc. all assert that implementation of the Unified Command System is a matter of standard and practice for TEMS events. Subsequently, to bar training in, and personnel as the medical liaison, affects the chain of survivability of any patient needing medical care during a SWAT/TEMS, and places the police officers, paramedics and citizen stakeholders at various risks.

Public trust must be maintained through transparency and quality services provided on behalf of the City of Madison. Misinformation such as assertions by the Madison police spokesman Joel DeSpain on Wednesday, May 20, 2009 in the Wisconsin State Journal that: “We now have a medical component on SWAT teams, … and, if anyone gets shot, we can do immediate field surgery.” Is not only misinformation, it irresponsible. TEMS Team Chairman, Fire fighter paramedic II, Dan Williams communicates in June 2010, that there remains a lack of a medical liaison or communicator in the I.C. during SWAT/TEMS events. Further, the TEMS current Training Chair, Josh Erdman, a Fire firefighter paramedic and experienced pre-hospital emergency medical instructor who is also employed by the University of Wisconsin Emergency Service Education Center, also writes the need for Combat Casualty Care training remains a priority as does training in communication and extraction during SWAT/TEMS events. This, is evidence that the communication among team members, administrative personnel and body
politic is less than transparent. A public education campaign to properly inform stakeholders must be considered.

Since the inception of the team in 2006 and the original ten members, there has been a high level of turnover (seven of the ten original team members) and a difficult time filling the team positions. Many members cite a need for administrative support in drafting and implementing Standard Operating Guidelines, training opportunities, and equipment procurement in addition to the team chair and training chair remarks. (MFD TEMS Year End Report, 2008). There remains a sense a lack of support and trust in administrative staff which has be realized by many members of the team as evident in the turn over. In addition, perhaps the lack of motivation through assigned tasks can be traced to the lack of support, trust, and confidence in administrators. (TEMS Year-end report, 2008). In fact, Stephen M.R. Covey writes on the subject of trust as: Self-trust, deals with the trust we have in ourselves-in our ability to set and achieve goals, to keep commitments, to walk our talk-and also our ability to inspire trust in others”. He asserts, “societal trust is about creating value for others and for society at large. The principle underlying this phase is contribution.” (Covey, S.M.R., 2006) The Madison Fire Department TEMS members are dedicated, professional and very skilled, yet aware of inherent quality service risks and shortcomings. When the team was selected, much of it was on proven field experience and proven team commitment as came through during initial recruitment interviews. They have attained a certain level of professional respect and credibility as proven in their work record. Covey, comments: “trust” is a measure of credibility and competence. Further, that in a court of law when a person is giving testimony a prosecutor will try to erode that credibility and disprove their competence. Covey maintains:
First that you are a person of integrity...have a reputation for being truthful, and that you would not lie. Second that you have good intent—that you are not trying to deceive or protect anyone, that you do not have any hidden motive or agenda.... Third, that your credentials are excellent, that you do, indeed, have expertise, knowledge, skill and capability in the area that you are called to testify. Fourth, that you have a good track record. That you have demonstrated your capabilities effectively in other situations in the past, which you produce results, and that there is good reason to believe that you will do so now.

Each of the original ten TEMS members cited in after action training and incident reports numerous requests for training and support that have yet to be realized. Many of those requests, if fulfilled, may produce their high level of performance capabilities and motivate further commitment.

The original TEMS members were assigned to develop the team in its entirety with standard operating guidelines, training and equipment proposals. However, given no formal authority to pursue, enact or obtain it. This may have led to the high turnover and lack of team motivation. Fire administrators awarded team members a mere 1% of annual base pay as an extrinsic motivator. This level of compensation has been argued, by Daniel H. Pink in his book *Drive* to be more of a non-motivator. Moreover, the original TEMS ten fire fighter paramedics joined the team and accepted the challenges during the initial interview to form the team, much due to the intrinsic motivators of such as purpose, autonomy and mastery in their profession. These intrinsic motivators are extensively discussed by Daniel H. Pink as those elements of personnel management necessary to achieve quality team growth and development. (Pink, *Drive* 2009.) These elements are understood by reviewing the findings and recommendations sections of the TEMS team 2008 year-end report. (Ritter, TEMS, 2008)  In fact, this researcher looked forward to working as part of a unique specialty team, in a new and emerging area of pre-hospital emergency medicine in Madison and having training to support that purpose. Thus, in
the pursuit of mastery. These sentiments were shared and voiced by many M.F.D. TEMS members during month meetings, after action training and incident reports. (Ritter, T.J. personal communications, 2008). Thus, by not providing support in the form of a medical liaison to effect quality patient care, efficient extraction, and transportation communication, quality service and goal directed therapies may never be fully realized.

John Mariotti, a former manufacturing CEO and consultant wrote: “Failing to plan is planning to fail” in Industry week on July 8, 1998. He maintains that a strategic plan must be clear, concise and flexible. Further, that “if the plan can’t be shared with those who must execute it, how will they know what to do? (Mariotti, 1998).

On June 25, 2010, a large-scale multi-agency training scenario from a law enforcement issue evolved into a large unified command emergency training scenario in the City of Madison, Wisconsin. TEMS personnel were utilized in a limited, yet specific TEMS role. Unfortunately, for this scenario, Madison Fire Department administrators were present from the outset and initial planning, development and staffing of the Incident Command Center. Thus, the practice was not necessarily the way they really deploy. This would have been a perfect training scenario for the TEMS personnel to study, train and experience incident and unified management strategies. James E. Driskell, Carolyn Copper, and Aidan Moran wrote an article titled: “Does Mental Practice Enhance Performance?” to the Journal of Applied Psychology in 1994. They define mental practice, as the cognitive rehearsal of a task in the absence of overt physical movement. Specifically, this definition refers to mental practice as a technique in which the skills or behavior required to perform a task is mentally rehearsed before performance.
Consequently, TEMS medics could have downloaded the standard FEMA ICS form number 206 Medical Operational Plan and used it as a template throughout the event planning, action and after incident. From that experience, it could have been modified as they deemed necessary, and certainly developed into a M.F.D. TEMS specific medical operational template to be utilized by TEMS members during events. In summary, the Driskell, Copper and Moran study indicate:

that mental practice is an effective means for enhancing performance, although less effective than physical practice. Thus, for tasks in which there are seldom opportunities for physical practice, or as a means of supplementing normal training, mental practice should be considered as an effective training alternative.

Thus, by simply including TEMS personnel in the training, a step towards re-igniting member intrinsic motivation by addressing the drivers of autonomy, purpose and mastery could have been realized.

Research reveals Newark, New Jersey Medical School Trauma Center University Hospital provides medical support for the Federal Bureau of Investigation and provides an advanced level of pre-hospital emergency medical support that could be emulated by many University Hospital Trauma Centers. (Lavery, R., Addis, M., Doran, J., Corrice, Mark., Tortella, B. Livingston, D., 2000). However, the purpose of this research is to consider applications of a municipal fire and emergency medical support for law enforcement SWAT teams. Albeit, the New Jersey Trauma Center model comes as close to providing the customer exactly what they want for quality function deployment as any entity reviewed. In fact, the modular framework of Fayol, through the Incident Management System, Quality Function Deployment can be understood as the foundation for their program and optimal patient definitive care. “The basic underpinnings of the model are that it is agency-to-agency based, with full administrative support within both organizations.” (Lavery, R., Addis, M., Doran, J., Corrice, Mark., Tortella, B.)
Like in Madison, the medical aspects operate under the University Hospital of the University of Medicine & Dentistry of New Jersey.

The authors, R. Lavery, M. Addis, J. Doran, M. Corrice, B. Tortella, and D. Livingston, as representatives of the Newark team, state:

It is critical to emphasize the importance of legal support, particularly when one considers the hazards inherent to tactical medicine and disaster response. They assert that a critical facet to the success of the program was the development of written policies and specialized medical protocols, ensuring a solid foundation model. In addition, the providers are composed of experienced paramedics, nurses, and physicians with EMS/field experience.

The Newark model is a progressive, diverse, relative, and transferable modular organization applicable to the Madison Fire Department TEMS challenges. In particular:

The Newark model uses three individuals to provide medical care during operations, each of whom takes a distinct role: communications, movement, or treatment. Their roles and responsibilities are clear and concise and revolve around optimal definitive patient care.

The communications officer serves as the team leader and is responsible for planning of the medical support needed for the operation. While on scene, the communications officer’s responsibilities include acting as a liaison between the SWAT team and local EMS agencies, communicating with the receiving trauma center, and in a multi-casualty situation, serving as the triage officer and aiding in the evacuation of the injured should the medical officer require assistance. In essence, the communications officer ensures that while on the scene, the remaining members of the medical team can concentrate on proper treatment and rapid evacuation of the patient.

The treatment officer is responsible for evaluation and care of the patient. This person’s sole focus is the patient, and no matter what else is going on with the mission, the treatment officer is to ensure optimal care is given to the injured personnel on the scene.

The movement officer is responsible for immobilization, movement, and evacuation of the patient from the scene. Before the mission, this person plans all routes of travel from the scene to the nearest trauma center or tertiary care facility. In the event of air medical evacuation, the movement officer designates landing zones and all routes of travel to that site. To facilitate maximal flexibility, there are no fixed teams and all team members (paramedic, nurse and physician) train for and can fill any one of these
three roles during an actual operation. (Lavery, R., Addis, M., Doran, J., Corrice, Mark.,
Tortella, B. Livingston, D., 2000).

The Madison Police department SWAT officers are also certified as American Heart
Association First responders. So, are the surrounding Dane County Sheriff’s Department SWAT
officers. However, in Dane County Sheriff’s SWAT operations, while on occasion they have
mutual aid police officers who are also certified paramedics, no medical operations are
considered until the tactical environment is secure. Further, at the moment a medical emergency
is noted, medical assistance is called to the Dane County Sheriff’s SWAT I.C. to act as a liaison.
While there is a successful Emergency Medical Training Program for Federal Agents, they
remain law enforcement officers primarily and do not practice nor train as paramedics or above.
G., 2004). Thus, underscoring the need to have specifically dedicated personnel with skills,
knowledge and training in respective disciplines during TEMS events. Maryland State Police,
Mark Gibbons, remarks that on most call-ups they have a medical control provided in the
incident command post and always utilize the ICS form 206. Mr. Gibbons is also a NTOA
instructor and shares that throughout North America there are diverse methods of support for
TEMS in SWAT environments. He maintains the foundation to support is a medical operational
plan, a representative in the Incident Command and utilizing a formal medical operational
template at every incident.

For the purpose of this research, because conducting a nationwide and or a comparative
survey proved unmanageable due to time and financial resources, an internet search for
comparative surveys took place. The U.S. Department of Justice provided funding and support
to David A. Kling of the Department of Criminology and Criminal Justice at the University of
Missouri-St. Louis and Jeff Rojek of the Department of Sociology and Criminal Justice St. Louis
University. Their award number #2000 Ij-CX-0003 from the Office of Justice Programs, National Institute of Justice, Department of Justice provided them the resources necessary to perform: “A multi-method study of special weapons and tactics teams.” This federally funded grant report has a document # 223855 and was accessed online, though it has not been published to date though submitted August 2008. The research is an in depth study of tactical teams nationwide and indicates finding data was difficult. In regards to emergency medical service delivery with tactical teams, they write:

Where medical services goes, 5% of respondents reported they had in place no special means to deal with medical emergencies at SWAT operations, while many of the agencies that did so included more than one. Seventy-eight percent of the respondents had an ambulance stand-by at the scene, 43% included paramedics on their SWAT team, 8% had an MD on respond to the location, and 20% reported having some ‘other’ special provisions for EMS. (King, A., Rojek, J., 2008).

The above study, was inclusive of many specialty teams and thus revealed limited data collection and uniformity within tactical environments. Subsequently, findings very similar to the MFD TEMS Weber incident mentioned earlier.

In conclusion, through appreciative multi-discipline inquiry a broad to narrow specific evidence based chain establishing the importance of collaborative, complete communication components during SWAT/TEMS events directs personnel staffing and training in three specific positions: (1). Medical Liaison/communicator, (2). Triage/extraction, and (3). Patient care treatment management and coordination.

The benefits go beyond physical realization of optimal service delivery and well into the depths of psychosocial employee health and well-being. Understandably, the impact on human resource development, professional development, and public trust can be detrimental to not only
the health of a patient, team member but the organization as well. Finally, as a shareholder in quality service delivery, it is our duty to reduce risk and civil liability to all stakeholders.

**Procedures**

The procedures utilized in the Applied Research Project (ARP) entailed defining a direct, clear and concise focused problem statement, and research purpose and quality research questions. Before a literature search was conducted, serious contemplation and discussion with professional mentors took place. Some warned against performing the research, others provided support. Notification to Madison Fire Department Administrative staff and Madison Police SWAT commanders then took place while at the National Emergency Training Center (NETC) in early February 2010. The action based research provided supportive evidence and a method to patient care needs during tactical emergency medical incidents for the Madison SWAT/TEMS teams. Consequently, fulfilling the purpose statement goal.

While at the NETC and the National Fire Academy in Emmitsburg, M.D., in February, this author initiated a literature review in the Learning Resource Center (LRC) on campus. Many articles regarding incident command, unified command and anecdotal journal articles were reviewed regarding TEMS and SWAT teams. Prior to departure from the NFA, this author was notified of my ARP evaluator. That ARP evaluator was sought out after class hours and spent time reviewing and re-drafting the problem and purpose statements. In late February 2010, this author prepared a calendar identifying ARP benchmark dates for completion with a final completion date of July 1st and a three-week period of rest and a final edit commencing in late July with a submission goal of mid-August realizing the due date of September 9th, 2010.
The challenge of accessing literature without delay was difficult. In May 2010, after going onto the private campus of Edgewood College in Madison, Wisconsin and accessing business texts and articles foundation sources were obtained. During the same period, consultation with professional peers proved cautiously supportive. This author’s research strategy was to find sources that were new, relative, and transferable to the protective service environment that shared commonalities. Many articles were found via use of the internet and the University of Wisconsin’s database.

Surveys, while considered, were deemed inappropriate due to sample and population size, information previously known, cited or experienced by this author and the mere fact, that many professional peers have limitations in their own deployment of TEMS. The author’s goal was to seek out a progressive, professional standard that could be replicated, modified, and achieve optimal patient care. With that understood, when SWAT/TEMS teams did not meet the minimal expectations or standards of Fayol, statistical philosophies, or incident management systems, they were discarded so as not to distract the author or reader of this ARP.

Before drafting the problem and purpose statement and submitting it, MFD TEMS training and after action reports were reviewed. Then the current TEMS Chairman and Training Chair were contacted via telephone. Both made a validation statement that no change in deployment practice had been made since the year-end report of 2008. During the time of the beginning of this research, the Division Chief Officer supervising the TEMS team had been re-assigned and when the new Division Chief took office, delays in access to documentation were noted. Once the problem statement and purpose statement were complete, they were shared with the Madison Fire Department Assistant Chief of Personnel Jim Keiken, Division Chief of EMS Logistics and Affairs Rich Kinkade, Madison Police Swat Commander Cam McClay, and
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Madison Fire Fighters International Association of Fire Fighters local 311 Union President and 5th District Vice-President Joe Conway. This author shared with them the ARP purpose and personal intent as a professional courtesy prior to embarking on the project.

Most of the data regarding the TEMS team specific training, documentation and final reports were easily accessible as this author was one of the founding training officers. However, due to promotion, this author was removed from the team as is a memorandum of understanding between M.F.D. administration and Local 311 Union drafted in 2009 indicating no fire paramedic officers shall be part of the TEMS team. The reasoning for this memorandum is unknown, as other Madison Fire Department specialty teams have lieutenants as members.

During this author’s inquiry and statistical search specific to SWAT/TEMS, limited environmental injury or transportation data could be found that may commonly be found in National Incident Fire Reporting systems. The Centers for Disease Control and National Institute for Safety and Health had no specific data available for the environment of SWAT/TEMS relevant to this author’s purpose. Speaking with Captain Tim Ritter of the Dane County Sheriff’s Department who is an experienced tactical commander and data analyst, direction to contact Gregory Swanson an FBI Training Instructor and National Incident Based Report System Coordinator was made. On Tuesday, May 25 2010, Mr. Swanson reported to this author that the FBI does collect data on officers injured in the line of duty, but does not define it to a tactical environment such as SWAT. He further suggested contacting the National Tactical Officer’s Association as they would be a credible source and may have specific data. Previous, to conferring with Mr. Swanson, contact had been made with Mark E. Gibbons of the Maryland State Police and who is an instructor with NTOA. Mr. Gibbon’s data was similar to that previously found in literature review, specifically 33 injuries out of every 1000 call-ups. Thus, as
Madison Police Captain Cam McClay, Dane County Sheriff’s Captain Tim Ritter, and FBI Supervisor Gregory Swanson had all directed me to NTOA, this author feels sufficient support for the legitimacy of data and expert opinion of Gibbons and the positional statement on inclusion of TEMS, which NTOA has published, and Gibbons emailed to me.

Another limitation was recognizing the extensive influence of minimal staffing, communication modalities and support have on service delivery. Though there are numerous journal articles on SWAT and TEMS, much are anecdotal at best. The global search for commonalities, risks and benefits proved worthy. In fact, so extensive such as into the psychosocial aspects of incomplete personnel support, that other research could be performed. Thus, the challenge was to include their relevance, yet stay focused on this ARP.

Data search limitations were found in semantical ambiguities. For instance, the Madison Police SWAT team, was until recently referred to as the Emergency Response Team. Thus, when searching data bases many search term variables such as Special Response Group, Special Response Teams were also utilized. Prior to submission of this ARP, the research was discussed with, and document reviewed and analyzed by peers in emergency protective service management positions.

The completion of this project occurred before the due date. Editing and addition of material continued until the stated date of submission. Thereby, proving a more expansive study could be performed if sufficient time was allotted.

**Results**

As Juran, Deming, Ermer, and the Newark Medical School and Trauma team all followed Fayol’s modular theory of organization design, their foundation of communication and
transforming the customers voice into quality service and production, so too can the Madison Fire Department to provide progressive TEMS delivery. Through the Incident Management System, Unified Command Structure and the Madison Fire Department’s own Policy and Procedure on Incident Command with known stakeholder expectations, the responsibility for communicating patient care needs rests with the Madison Fire Department.

The patient care management communications to be considered are unique to each of three positions: (1). The patient care treatment/triage officer should provide the extraction communicator with patient conditions, actions taken and needed resources. (2). The extraction officer should communicate extraction needs to the medical liaison/transportation communicator and provide a CAN report as soon as tactically able. (3). The medical liaison should communicate the information as provided immediately to the law enforcement incident commander, confer and coordinate as deemed appropriate. Further, the medical liaison should communicate to the appropriate transport unit and provide the earliest notification to the chosen medical facility. Ultimately, the medical liaison should document all actions, data, and future considerations.

The risks for not having a method of communicating patient care management needs should be instinctively understood, and while medics are engaged in patient care activities, they are most often in high risk, silent operation, and austere environments with extraction and transportation delays. Evidence suggests optimal patient care is achieved through rapid assessment, treatment, triage and transport. Thus, the military impetus for forward surgical teams to provide a crucial link, stabilizing patients for transport where hospitals were great distances from the battlefield. Fortunately, in Madison, Wisconsin most hospitals can be reached during any normal emergency transport within 15 minutes. Any delay in treatment and transport
Definitive care management in tactical situations reduces the quality of patient outcome. Therefore, the most important risk is that of low quality patient care management, communication, and coordination. Just as important to poor patient management, is the risk of a civil suit for deliberate indifference. While medical malpractice may not apply due to degree of culpability, the civil suit of deliberate indifference is left to a jury’s interpretation of Title 42 U.S.C. section 1983 with regards to cruel and unusual punishment and expectations.

In fact, in Police the Law Enforcement Magazine in May 2009, Devallis Rutledge comments on “Saving Money Through Training: cutting back now could cost you later in court.” Rutledge writes:

> In Monell v. New York DSS, the U.S. Supreme Court held that a plaintiff could also sue the officer’s agency or employing municipality if it could be shown that a constitutional violation resulted from an official policy or practice of the department.

Ultimately, if the City of Madison is trying to save money in these financial trying times, they are taking a great fiduciary risk. Moreover, understanding that during times of great stress, limited resources, and minimal support even the most skilled advanced care specialist needs patient care management direction.

While much of this research revolved around expectations and concerns for optimal care, consideration of proper patient care management must be briefly discussed. “Misapplication of the concept of the golden hour has led to a focus on speed of transfer to tertiary care facilities, often delaying early goal directed therapeutic interventions.” (Stroud, M. 2008).

Perhaps the Madison Fire Department Administration has rooted their practice of no medical liaison until requested in the myth of the golden hour. The concept of the golden hour
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came from an article written about successful patient delivery via usage of a helicopter transport. There was no mention of time, scientific data in that article or golden hour. However, the concept of the golden hour is a known term in prehospital emergency medicine training. With that come the considerations of the strategies of “load and go” versus “stay and play”. “It seems intuitive that patients with severe trauma who require surgical intervention be delivered to a center with such capabilities as expeditiously as possible.” (Hoejenbos, M., McManus, J., Hodgetts, T., 2008). Yet, MFD TEMS does not have the ability to coordinate such service without a medical liaison or communication SOG in place.

H. Bickell, J. Wall, P. Pepe, R. Martin, V. Ginger, M. Allen, et al, authors of the article titled: “Immediate versus Delayed Fluid Resuscitation for Hypotensive Patients with Penetrating Torso Injuries”, indicate in consideration of hypotensive patients with penetrating torso injuries a delay of aggressive fluid resuscitation until operative interventions are performed has been shown to improve patient outcome. The decision-making concept of not providing fluids for a hypotensive patient is often only seen in seasoned prehospital urban paramedics in areas like Madison, WI.

“When a mass-casualty incident occurs in the vicinity of more than one hospital, primary triage, evacuation priority decision making, and rapid distribution of casualties between all of the adjacent hospitals enables efficient and effective containment of the event.” (Pinkert, M., Lehavi, O., Goren, O.B., Raiter, Y., Shamis, A., Priel, Z.,..Bar-Dayan, Y., 2008). The above quote is taken the afore-mentioned authors of published original research titled: “Primary Triage, Evacuation Priorities, and Rapid Primary Distribution between Adjacent Hospitals-Lessons Learned from a Suicide Bomber Attack in Downtown Tel-Aviv.” Being that the research took place in an area known for military and civilian encounters, the findings and recommendations
must be considered for this research. Moreover, with the infrastructure in Madison, and TEMS history of deployment with SWAT and political dignitaries, a risk of terrorist type emergencies is present. Training all TEMS members in advanced decision-making and Incident Command could ultimately serve in the best interests of not only patient care management, but also the community at large.

The article: “Improving prehospital information for trauma patients”, comes from Westmead Emergency Department in Australia, and has a direct correlation to the Madison Fire Department TEMS team. Specifically,

The consequences of breakdowns in communication can be adverse and devastating. It is in the best interest of the patient and all personnel involved utilizing an effective and simple tool to enhance and ensure that key information is exchanged without error or ambiguity. (Johnson, D., Wilson, M., 1998).

The point being, use of the proposed radio report format from Dr. C. Zuver, (Appendix H) by all TEMS personnel is expected in professional organizations. Moreover, the Madison SWAT commanders are unfamiliar with this format and terminology, thereby justifying their request for Madison Fire Department personnel to act as the medical liaison.

Subsequently, through implementation and use of the incident command structure and provided templates such as medical operational form ICS #206, MFD radio report format, adherence to a TEMS communication SOG; SWAT/TEMS collaboration could reach peak performance in mission objectives. Ultimately, the risk of loss of public trust through questionable credibility and competence could slow service support via public distrust and lack of support. Thereby, providing further impetus to the creation, adoption and implementation of the TEMS communication SOG.
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Research revealed tactical emergency medicine guidelines are ad hoc at best. The Dane County Sheriff’s Department, like the Milwaukee, Wisconsin, and Orange County Sheriff’s office ad hoc medical guidelines confirm the Klinger and Rojek August 2008 report on Multi-Method Study of Special Weapons and Tactics Teams. Likewise the Newark, New Jersey Medical School report, “Taking Care of the Good Guys: A Trauma Center-based Model for Medical Support for Tactical Law Enforcement” mentioned:

The term tactical medicine has been used to denote the delivery of emergency medical care to specialized military or law enforcement units under “battlefield” conditions whether they are in the jungles of southeast Asia or on the streets of a metropolitan city. Because this is a relatively unexplored concept, individual medical and LE personnel have developed tactical medical support that accommodates their particular needs. Some have developed teams by using information from military sources and EMS experiences, whereas others have approached it on an ad hoc basis, with limited or no medical planning. (Lavery, R., Addis, M., Doran, J., Corrise, M., Tortella, B., Livingston, D., 2000).

Madison Fire Chief Division Chief Rich Kinkade stated that he would like to provide personnel support in the Incident Command Center, but has indicated there will not be a change in MFD Administrative practice. Thus, management and executive shareholders questionable commitment to quality service delivery philosophies, prehospital emergency care guidelines, and personnel ability to enact a medical liaison/communicator Standard Operating Guidelines hinder the creation of such a product. Finally, recognizing that enacting this SOG is more than a mere technical change is imperative. Developing working administrative relationships, pursuing and obtaining financial support and sharing resource-funding allocation for training events as a matter of standard operational budget practice, even in this time of fiduciary constraint is imperative to TEMS program success. Proper media presentation and public education as to the
service capabilities of the Madison Fire Department may prove to increase service efficiency in many ways as alluded to previously herein.

**Discussion**

The current M.F.D. TEMS team not having a third member or M.F.D. designated staff member acting as a medical liaison greatly effects collaboration, trust, leadership credibility in quality decision-making and overall service reputation.

“A house divided against itself cannot stand….Our cause must be in trusted to, and conducted by its own undoubted friends-whose hands are free, whose hearts are in the work-who do care for the result.” These remarks are from Abraham Lincoln’s “A House Divided” (June 16, 1858) speech. It is cited in Donald T. Phillips *Lincoln on Leadership* book as Phillips shares how Lincoln “gained trust and respect of his subordinates, building strong alliances on both personal and professional levels.” The divided house Lincoln refers to was that of the U.S. Senate and the speech was given as he accepted the nomination for U.S. senator. Trust in partnership to lead the nation is just as important when leading a SWAT/TEMS team.

Robert Eckert, CEO, of Mattel Inc., is quoted in Stephen M.R. Covey’s book, *The Speed of Trust* as stating: “As you go to work, your top responsibility should be to build trust.” Trust then is something that can be built, or lost. In fact, Covey illustrates an economical aspect of trust sharing,

A formula that will enable you to take trust from an intangible and unquantifiable variable to an indispensable fact that is both tangible and quantifiable. The formula is based on this critical insight: Trust always affects two outcomes-speed and cost. When trust goes down, speed will also go down and costs will go up. When trust goes up, speed will also go up and costs will go down. (Covey, S.M.R., 2006).
In the case of the M.F.D. TEMS team, costs of re-training seven new TEMS medics out of ten originally selected in a span of three years are not only an economic factor, but as mentioned previously affect performance and psychosocial factors. Fulfilling the requests of the Madison Police SWAT and TEMS members by providing a third TEMS member or other M.F.D. member skilled and qualified to act in the capacity of a medical liaison would do much to increase TEMS competence of mission capability, credibility as a unit requesting additional training and support, and overall trust among team members, be it law enforcement or medics within the team.

To avoid short-term thinking and mediocre work ethics, creativity and high performance must be encouraged. Madison Fire Administration must remove barriers to intrinsic motivation. By providing additional personnel support as requested, they will acknowledge a legitimate concern for the quality of TEMS service and reaffirming dedication to individual’s purpose. Further, by enacting the recommended SOG of TEMS communicator/medical liaison, TEMS personnel will enjoy autonomy in task. Finally, through additional training and support in incident command scenarios, the TEMS medics will enjoy the pursuit of mastery in their performance. Thus, by fulfilling the intrinsic motivators of TEMS members by including one additional TEMS specific person and implementing a standard operating guideline that clearly outlines the roles and responsibilities of the treatment officer, extraction and medical liaison officer, the costs of employee dissatisfaction, high turnover, low mission service capabilities and public misinformation will be reduced. Moreover, the efficiency, professionalism and risk reduction to police officers, paramedics and citizenry alike will be increased.

“Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.” (Deming, 1982). Consequently, the Fire
and Police administrators, like many leaders facing change, must “learn new ways” and thus forge through “adaptive change challenges”. (Heifetz, R.A., Linsky, M., 2002). The aspects of leading, changing and improving are not new. In fact, these concepts of quality improvement are rooted in the fabric of history.

The below quote is taken from Phillips’ *Lincoln on Leadership* book as he discusses leaders being a catalyst for change. The speaker is Abraham Lincoln, “in his Annual Message to Congress, exhorting its members to join him in a united venture to be conducted by the executive and legislative branches of government (December 1, 1862).”

Still the question recurs can we do better? The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so must we think anew, and act anew. (Phillips, 1992).

Pragmatism is known to be a philosophy dealing with facts as opposed to idealism, often marred by the exclusion of intellectual process or challenges. Phillips presents Abraham Lincoln’s quotes a matter or reference for leaders to reflect and change. Thus, those with the formal authority to affect change with the TEMS team must rise and act to decrease the various risks identified herein. Successful patient care management, risk reduction and mission success can be achieved through intellectual processes, quality service design, and stakeholder involvement.

Ronald A. Heifetz and Marty Linsky, authors of *Leadership on the Line*, a change management study, introduce change management discrepancies briefly, stating:

Indeed, the single most common source of leadership failure we’ve been able to identify—in politics, community life, business, or the nonprofit sector—is that people, especially those in positions of authority, treat adaptive challenges like technical problems. (Heifetz, R. & Linsky, M. 2002).
This, awareness leads into a great discussion and perhaps further research of applicability to the Madison Fire Department leadership style, of which is too vast to comment further in this study. However, it must be understood that a technical change should occur to affect a positive outcome for patient care management immediately. That being, rather than having two TEMS medics on the entry team and no one coordinating extraction or transportation communications responsibilities, one medic could be on entry serving as patient care and assessment, the other in the Incident Command serving as medical liaison extraction coordinator. However, optimal care service should be made in the form of an adaptive change and having a minimum staffing of three TEMS medics, serving in three specific roles.

The M.F.D. TEMS team can pursue change in two diverse ways: first, prior to the next SWAT/TEMS incident or training call-out, review the three specific modalities of quality function deployment as noted in the Newark model and adapted into the M.F.D. TEMS communications SOG. Specifically, understand: TEMS operates under a Unified Command Structure and the Madison Police SWAT Commanders shall authorize a medical operational plan similar to that template suggested to FEMA’s ICS form #206, and implement the consideration of advanced utilization of Dr. Christian Zuver’s 2010 radio report format for concise, clear triage information. Additionally, the patient care communications to be considered are unique to each of three positions: (1) The patient care/triage officer should provide the extraction communicator with patient conditions, actions taken and needed resources. (2) The extraction officer should communicate extraction needs to the medical liaison/transportation communicator and provide a CAN report as soon as tactically able. (3) The medical liaison should communicate the information as provided immediately to the law enforcement incident commander, confer and coordinate as deemed appropriate. Further, the medical liaison should
communicate to the appropriate transport unit and provide the earliest notification to the chosen medical facility etc. Finally, the medical liaison shall document all incident data and fulfill departmental National Incident Fire Reporting System (NIFRS) report requirements within 24 hours of incident. The importance of all TEMS members being trained in all three positions must be realized. To enable a quality function deployment of the Unified and Incident Command system if incidents require, must be emphasized. Recognizing that the TEMS team are Madison Fire fighters and have trained with incident management system strategies, and having them trained in a variety of roles, will increase the flexibility and service capability of any event. Moreover, “the majority of positions within the IMS will not be activated until the initial response is determined to be insufficient to handle the situation.” (National Fire Service Incident Management System Consortium, 2000). Ultimately, the SOG must reflect the three positions, roles and responsibilities, while being clear and concise. These actions are then performed by the personnel having formal authority and utilizing current knowledge, thus described as “technical changes” by Ronald A. Heifetz and Marty Linsky.

The benefits to having a common method of communicating patient care management needs, within span of control performance measures, during tactical emergency medical incidents are many. Primarily, it can become a disciplined process or procedure by which the medical aspect of any incident is addressed. That is to say, the medical liaison, extraction/triage and patient care roles and responsibilities can assist with decision making and mission efficiency whether it be tactical emergency medical, lake rescue, hazardous materials, heavy urban and rescue or firefighting. Moreover, when these integrated communication concepts are applied, mission efficiency can be raised. For example, one NIOSH fire fighter fatality investigation and prevention program report specifically states:
Optimum span-of-control in the incident command system is five, with an acceptable spread of two to seven. On a situation that is not yet under control, no one operating under ICS should have more than five personnel reporting to him or her. (NIOSH #F2003-36.)

While this recommendation comes from a wild land/urban interface fatality and injury report, the life safety risk in any incident that is not under control, is far too great to not provide sufficient personnel to effect a proper span-of-control.

The span of control theory allows for communication and service efficiency. Parallel to this strategy are risk communication principles that shall be considered by every incident commander and medical liaison. To illustrate the magnitude of following through with pre-planning for communication and early notifications, the below remarks come from the United States General Accounting Officer and are cited testimony before the subcommittee on National Security, emerging threats and International Relations, Committee on Government Reform, House of Representatives.

These principles can be considered when determining the nature, timing, and extent of warnings regarding threats to public safety by ensuring the public has sufficient information to determine actions to take to prevent or respond to emergencies. (GAO, 04-538T March 16, 2004.)

The principles are broad, yet a narrow application can be relative and transferable to even the patient care management or extraction officers CAN report. The gravity of the GAO report must be emphasized.

Experts have identified the following as important principles for individuals when making risk management decisions: 1. Specific information on the potential threat including, to the greatest extent possible, the nature of the threat, when and where it is likely to occur, and over what time period, and guidance on actions to be taken. (GAO, 2004).
The ability to guide additional personnel in the rapidly changing and dynamic nature of emergency services practices must have structural support planned for in all aspects of duty. Preplanning for disaster and emergency decision practices and principles are the foundation for risk mitigation. These principles will assist all personnel in risk management by establishing guidelines, insights, expectations on experience in preparing, planning, communicating and decision making.


The decisions of team leaders in fire zones are unusually clear-cut and consequential for the goals of the enterprise, but they are not unlike decisions faced by managers of most organizations. We suggest that three factors – under preparation, acute stress, and ambiguous authority-can result in suboptimal decisions by team leaders…. (Useem, Cook, Sutton, 2005).

To assist in risk mitigation, the stakeholders of the Madison SWAT and TEMS teams must collaborate as did the above studied agencies and authors. The above authors, Michael Useem, Wharton School, University of Pennsylvania; James Cook, U.S. Forest Service and National Interagency Fire Center; Larry Sutton, U.S. Bureau of Land Management and National Interagency Fire Center set out to identify sources of ineffective leadership decisions during the fatal South Canyon fire of July 5-6, 1996. Not all decisions will be referred to herein, yet a brief discussion holds merit to this research.

The authors of the article, “conclude that five (decisions) were relatively optimal for the triple objectives of safety, speed, and suppression, but five others proved suboptimal.” These
objectives run parallel to those of emergency medical service delivery of safety, speed and definitive patient care management. Common concerns for all managers, including emergency medical service personnel are also mentioned in the authors’ analysis in referring to the South Canyon Fire managers, indicating: “Much of their sub-optimality is traced to the fact that the team leader was undertrained for leadership decision making, faced intense stress, and operated without clear authority.” (Useem, Cook, Sutton, 2005).

Thus, the qualified, multi-perspective study reveals parallel elements of risk currently facing TEMS personnel who have placed upon them certain, misguided expectation of capability with a deliberate indifference of support.

To improve decision-making in any organization, Useem, Cook, and Sutton discuss four leadership attributes and underlying decision quality. Specifically,

- The leadership attributes of being a strategic thinker; with the underlying decision quality of acquisition and analyzes data on the environment.
- The leadership attribute with the ability to mobilize; and the underlying decision quality to assign people and capital.
- The leadership of ability to execute; with the underlying decision quality of timely and appropriate implementation.
- The leadership attribute of personal selflessness; with the subordinate private and collective purpose as the underlying decision quality. (Useem, Cook, Sutton, 2005).

Useem, Cook, and Sutton’s article cites scientific research and proves to be an excellent resource for preplanning, organizational design, staff development, and certainly foundational decision-making processes. While this author’s research focuses on establishing a method of communicating patient care needs, the attributes of decision makers and the underlying quality of their decisions greatly affect the overall quality of SWAT/TEMS mission success. Until TEMS
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has a representative with formal authority to influence all four decisional realms mentioned above, ambiguous leadership may well prevail.

The need for greater MFD TEMS support must be emphasized. K. Rinnert and W. Hall of the Division of Emergency Medicine and Department of Surgery at the University of Texas Southwestern Medical Center at Dallas wrote an article: ”Tactical emergency medical support”, published in outlining some relevant and transferable observations. Specifically,

Medical care providers must have an understanding of, and consider, law enforcement tactics and mission specific objectives when planning and providing medical support. Traditional EMS practice is inadequate to meet the unique situational, logistic, and austere elements of the tactical environment. (Rinnert, K., Hall, W., 2002)

This is very nearly the status of MFD TEMS. What is more, many of the TEMS personnel have more tactical experience than certain MFD administrative staff that may be called into the I.C. as a Medical Liaison and of whom may also be unfamiliar with the Madison Metropolitan ALS Medical Protocols. With those protocols involved, TEMS SOGs are brief and specific. Consider Rinnert and Halls’ remarks:

Both military and civilian medical literature describes a need for immediate, life-saving medical interventions, especially in the case of penetrating trauma. Twenty percent of persons fatally wounded by penetrating trauma die from readily treatable causes, including tension pneumothorax (10%), exsanguinating peripheral hemorrhage (9%), and airway obstruction (1%). Because 15% of those fatal penetrating injuries die within 30 minutes of wounding, time is paramount.

The close proximity of tactically proficient medical personnel, timely applications of appropriate stabilizing treatment, and expedient evacuation to the closest appropriate medical facility are among the many factors that may maximize survival rate for those injured. (Rinnert, K., M. Hall, M.,2002).

Thus, the complete chain of service efficiency and modular application to the incident management system of the SWAT/TEMS must be fulfilled with a third skilled MFD representative and integration of a TEMS specific communication SOG.
On May 28, 2010, Ian Yarett, a journalist for Newsweek magazine asks of BP Deepwater Horizon disaster in his article: “Why wasn’t there a better plan?” He cites Rick Steiner, a consultant on oil spill and prevention as saying: “It’s the responsibility of the industry to have it (a realistic plan to stop a disaster), and it’s the responsibility of the government to ensure they have it…. But, neither happened. (Yarrett, 2010). The leaders, in business and governmental services all are subject to the flaw of cost over adequate service. In essence, this author believes that quality decisions must refer back to stakeholder concerns and mission. Just as Juran, Deming and Ermer state and as the Newark model proves. Finally, with the objectives of safety, speed, and mission administrators must consider risks and choices in decision making.

The Madison Fire Department TEMS organization, as a whole, may remain at substandard mission potential until a third staff member is added to the team. The cumulative impact of creating, implementing and staffing a TEMS specific communication SOG would reduce risk on many levels as previously discussed. Moreover, staffing one TEMS member as the patient care officer with the entry team. Further, staffing a second TEMS member as the triage/extraction officer that may be deployed with the entry team; and a third TEMS member staffed as the medical liaison/communicator would establish organizational safeguards and provide a fundamental physical component that would decrease the psychosocial abnormalities such as team dysfunction, high turnover, lack of participation and even provide experience for employees seeking advancement.

**Recommendations**

Based on this research, a discussion with the Chief of EMS Logistics and Affairs will take place. Further, a copy of this document will be provided for his consideration. In
accordance with this research finding, during Madison SWAT/TEMS events the police are responsible for tactical communications, while the firefighter paramedics are responsible for patient care management communications. Further, due to the TEMS expertise, insight and critical infrastructure in the form of policies, procedures, and medical protocols use of a clear, concise, yet comprehensive CAN report that can be readily relayed is imperative. The risks for not having a method of communicating patient care management needs include inability to perform optimal service or mission success, risk of great bodily harm due to delays in patient care management, risk to civil liability, and increased dysfunction due to psychosocial factors.

In order to achieve a progressive, quality, flexible and efficient method of communicating patient care management needs during SWAT/TEMS events, the minimum of three functions must be addressed during every incident management situation. Those three positions to be minimally staffed are: medical control/communicator, extraction/coordination, and triage treatment. A pragmatic approach to quality service delivery by the Madison Fire Department will hinder development of a TEMS specific communication SOG. Therefore, quality function deployment in adherence to organizational theory, design and incident management systems standards as set forth in this document must be implemented to achieve quality, progressive service deployment decreasing risk and safeguarding the constitutional rights of all shareholders. In order to achieve this service efficiency, discussion of this research and use of the tools in addendum, to ensure the SOG must take place. As this researcher is no longer a member of the TEMS unit, this document will be forwarded to the Chief of EMS and Logistics Affairs for his review and consideration. Subsequently, a copy will be forwarded to the Local 311 Union President and TEMS Committee Chair as well as the Madison Police SWAT commander. It will be suggested that a review of
Definitive care management in tactical situations

The Strategic Plan template will be explained as a template to apply cognitive process in applying action, planning implementation and evaluation procedures. In essence it can be the foundation of brainstorming, yet provides clear, documented direction for planning. The first section of the template identifies issues. The stakeholders will be asked to identify issues they determine as appropriate in affecting a change in the TEMS service. For instance, this author has identified: staffing, training, and communication for patient care management as three separate issues. The second point is to analyze the current status of the team and their interests. This author suggests tools such as identifying the Strengths, Weaknesses, Opportunities and Threats facing the TEMS team and identifying what can be taken away from that analysis. Also, particular attention to the environmental relationships facing this collaborative team and the stakeholders. Additional tools to be considered are the Boston Consulting Group matrix as an evaluative tool applied to determining which projects or environments should be invested in and by whom. The Situational Leadership theory as considered for application to team members and empowering them, while supporting their personal autonomy, pride, ownership and ultimately team advancement. The alternatives of choices in the analysis must be document and weighed against the risk of less than optimal service delivery. Finally, the decisions must be determined with a plausible plan of how to adopt, edit and implement the proposed TEMS specific communication SOG in addendum. (Appendix J.) Consequently, the implementation of the SOG must be documented, communicated, trained on and announced (public education considered). Progress of the team and the SOG should be documented on a timely basis with after action and...
training reports recorded. Ultimately, an annual report should be performed by the TEMS team with findings and recommendations for further developments shared.

The first recommendation will be that the Chief of Logistics and EMS Affairs suggest to the SWAT commanders that only one TEMS medic go with the entry team, and the other serve as the medical liaison. While this is a technical change, all TEMS members have the skill, insight and experience in the performance of this role due to their extensive service history and performance on a daily basis within the Madison Fire Department during their service as a fire fighter paramedic. Next, is to recommend that a third person be deployed on every TEMS incident. With that said, it is known this Chief Officer will have to discuss this recommendation with additional MFD fire administrators. To address financial concerns, the Chief of EMS Logistics and Affairs should communicate this need with the departmental grant writer. Further, converse with the public education officer and develop a strategy to find and secure public support via media releases, neighborhood grass root meetings, and work service luncheon presentations. A public education strategy must be employed to accurately reflect the TEMS service capabilities. Once the Chief of EMS Logistics and EMS Affairs makes the commitment to further enhance team support in the form of service capabilities, staffing, financial support and public awareness, members commitment will likely increase and the team will attract new members.

In addition to this research and the Strategic Plan Template, the Newark model should be copied as well and discussed as an optimal level of care, while noting different environmental applications due to organizations, geographic location and number of call-outs, etc. Thus, it should be understood that the proposed M.F.D. TEMS model, while scaled back, has the ability to expand in accordance with M.F.D policy and procedures. Furthermore, a realistic deadline of
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Future consideration of equipping TEMS members with cell phones and text messaging for silent communication capabilities should be sought. Further, additional funds should be secured to train TEMS medics in tactical combat casualty care (TCCC) guidelines in accordance with the latest Pre-hospital Trauma Life Support edition. While, Madison protective service departments have been known to be more liberal in their service deployment, the fact of the matter is the SWAT/TEMS team has been developed to respond to a growing concern for high risk incidents where military tactics are deployed. Emergency preparedness should emphasize pre-planning for mass casualty incidents and use of TEMS medics as initial responders to diverse locations as leaders in triage, treatment and transportation during the medical operation.

Through review of a 1998, train accident in Germany, the authors’ summary remarks include:

The crash occurred on a weekday in an easily accessible area, which allowed swift implementation of emergency services. The primary problems that arose were organizing command of the large numbers of aid workers who responded, inadequate coordination of medical response, and the lack of formal organization to provide psychosocial assistance. (Iselius, L., Nilsson, P., Riddez, L., 2006.)

With that said, further research into skills in contact, cover, concealment, patient care, extraction and communication are a matter of Tactical Combat Casualty Care course curriculum and should be considered. In regards to training programs, M.F.D. TEMS, as a unit, should pursue and participate in the Counter Narcotics Tactical Operations Medical Support (CONTOMS) program. This program was developed by the Uniformed Services University of the Health Sciences (USUHS), the Department of Defense medical school, and its Casualty Care Research Center, the Department of Defense, Department of the Interior, and the US Park Police Special...
Forces Branch. Researchers and authors K. Rinnert and W. Hall describe CONTOMS in the following way:

The content focuses on topics unique to the practice of tactical medical care, including medical skills appropriate in hostile and austere environments, recognizing and treating unique wounding patterns, providing preventive medical care during sustained operations, and applying special law enforcement principles to the delivery of medical care. (Rinnert, K., Hall, W., 2002)

Through standardized unified team training and inter-agency collaboration professional insight, anticipation and experience will result in peak team performance and various progressive deployment abilities.

The proposed TEMS SOG (Appendix J) can be modified for any team deployment whether it is a fire, Haz-Mat, Heavy Urban Rescue, Rapid Intervention or Lake Rescue operations. Thus, consideration and collaboration with these leaders will be pursued prior to full enactment of the SOG for their consideration and review. This shall be a matter of proactive planning, as historically the manner of providing Emergency Medical Service for Madison and the surrounding communities has not changed. However, the manner of environmental construction to protect Madison and the surrounding communities has. Those protective measures are readily visible in the construction of University and Governmental buildings where natural barricades restrict access, are monitored by security cameras, and are understood to have a new (since 9/11) law enforcement influence of protecting environments and structures overriding the past law enforcement focus of protecting people only.

A continuous evaluation of the TEMS team, equipment, training, operations, Standard Operating Guideline inclusive shall be proposed as in addendum. (Appendix K.) This tool will be explained in depth during SWAT/TEMS meetings to assist in quality improvement planning.
This evaluation tool is intended to be in the form of a survey that addresses stakeholder interests and must be inclusive of the five following elements. Those elements or fields of interest shall be that the tool is reliable, responsive, affords assurance, is empathetic and includes tangibles also referred to as outliers in some industries. Gathering the data, and creating a “House of Quality” or matrix by which measures are identified answering the stakeholder interests will ensure optimal performance, service quality, and success. It is imperative that the TEMS service consider the modular design consisting of a minimum of four “walls” or fields of relationships. Those important fields of emergency protective services and relations among the professionals, such as medics, police officers, fire and police administrators, communication centers, dispatchers, nurses, physicians and citizenry.

Further, the relationship among the various institutions such as the police and fire paramilitary organizations, hospital staff and practice disciplines. It is important to recognize that personnel and institutional interests may vary. Ultimately, the professional expertise, training and experience of not only TEMS medics, and SWAT officers, but also any additional EMS or law enforcement responder. Finally, the fourth dimension to be considered in this foundation is the organizations as political entities and their roles and responsibilities. Those organizations to be considered are, to name a few, the Madison Fire, and Police Departments, International Association of Fire Fighters Local 311 Union, Dane County Emergency Management, State of Wisconsin, National Fire Protection Association, National Tactical Officer’s Association, American Heart Association, the University of Wisconsin Level one Trauma Center and all related entities.

With these elements considered, a foundation for thorough TEMS planning and deployment is likely to end with mission success. Use of this tool, should be directed towards
meeting the challenges of a Mass Casualty Incident as well as any SWAT/TEMS incident. Similar to assessing the level of hospital emergency preparedness, the following components shall be discussed: “Planning and policies; equipment and infrastructure; knowledge and capabilities of staff; and training drills as the major component of maintaining a high level of preparedness.” (Adini, B., Goldberg, A., Laor, D., Cohen, R., Zadok, R., Y. Bar-Dayan, Y., 2006.)

Understanding that TEMS can plan for events inclusive of things they know, and things they don’t know will likely enable them to adapt and overcome emergencies when they realize there may be things they didn’t know they didn’t know. Ultimately, planning for quality service deployment will result in mission success, specifically decreasing the threat of harm to fire fighters, paramedics, police officers and citizenry alike.
References


Successful development and implementation of a tactical emergency medical technician training program for United States federal agents. *Prehospital and disaster medicine.* vol. 20, No. 1. Retrieved from website: [http://pdm.medicine.wisc.edu](http://pdm.medicine.wisc.edu)


Definitive care management in tactical situations


McGrath, M.E. (2010, June). The painful lessons from BP’s decisions. Retrieved from: 
http://www.americantowns.com/tx/dallas/news


Definitive care management in tactical situations


### Appendix A

#### Trauma Activation Criteria

<table>
<thead>
<tr>
<th>Level I</th>
<th>Level II</th>
<th>Trauma Consult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstable airway</td>
<td>Penetrating injury proximal to elbow or knee</td>
<td>Injured patient that does not meet level I or II activation criteria and/or has been evaluated at a referring hospital’s ED and is being transferred to UWMC for further eval.</td>
</tr>
<tr>
<td>Intubated and transported from the scene</td>
<td>Flail Chest</td>
<td>Cannot exhibit physiological abnormalities</td>
</tr>
<tr>
<td>Respiratory compromise or obstruction</td>
<td>Combination burn/truma</td>
<td>Should have only suspected single-system injuries</td>
</tr>
<tr>
<td>CONFIRMED blood pressure &lt;90 at any time</td>
<td>2 or more proximal long bone fractures</td>
<td>ED trauma oval of patients diagnosed with a single system injury may be directly performed by the EM physician and/or subspecialty service.</td>
</tr>
<tr>
<td>Emergency physician discretion</td>
<td>Pelvic fracture</td>
<td>These patients can be admitted to the appropriate subspecialty service.</td>
</tr>
<tr>
<td>GSW to abdomen, neck, chest, and/or flank</td>
<td>Open or depressed skull fracture</td>
<td></td>
</tr>
<tr>
<td>GCS &lt;8 with mechanism attributed to trauma</td>
<td>Paralysis-new onset</td>
<td>Must call PICU attending to give them a “heads up” if patient will be admitted to PICU</td>
</tr>
<tr>
<td>Three or more trauma patients (level I or II) arriving at the same time will be paged as level I episode</td>
<td>Amputation proximal to waist or ankle</td>
<td></td>
</tr>
</tbody>
</table>

**Vital sign parameters for pediatric level I trauma**

<table>
<thead>
<tr>
<th>Age</th>
<th>SBP</th>
<th>HR</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 months</td>
<td>&lt;60 or</td>
<td>&lt;90 or &gt;180 or</td>
<td>&gt;60</td>
</tr>
<tr>
<td>5 months - 6 years</td>
<td>&lt;70 or</td>
<td>&lt;70 or</td>
<td>&gt;60</td>
</tr>
<tr>
<td>6 years - 17 years</td>
<td>&lt;80 or</td>
<td>&lt;60 or</td>
<td>&gt;60</td>
</tr>
</tbody>
</table>
Appendix B

START/Jump START
Triage Algorithm

Able to Walk? Yes \rightarrow Minor \rightarrow Secondary Triage

Breathing

No \rightarrow IMEDIATE

Yes \rightarrow POSITION UPPER AIRWAY

Breathing Apneic \rightarrow DECEASED

Airway

POSITION UPPPER AIRWAY

Breathing

Apneic

5 Rescue Breaths

PEDI

ADULT

No Pulse

IMEDIATE

Respiratory Rate

< 30 (Adult)
15 - 45 (Pedi)

IMEDIATE

Perfusion

Cap Refill > 2 sec (Adult)
No Palpable Pulse (Pedi)

IMEDIATE

Mental Status

Doesn't obey commands (Adult)

"P" (Inappropriate Posturing or "U") (Pedi)

IMEDIATE

Obeys commands (Adult)

"A" or "V" or "P" (Appropriate) (Pedi)

DELAYED

Pearls:

* Using the Jump Start Algorithm, first evaluate all children who did not walk under their own power.
* All EMS providers are encouraged to use the Triage Algorithm any time there are more than 2 - 3 patients requiring evaluation, treatment or transport.
Appendix C

Trauma

General Approach to All Trauma Patients

Assess all patients for major trauma criteria. Major trauma patients should have transport initiated within 10 minutes of arrival on scene whenever possible. In the setting of major trauma, DO NOT prolong scene time to perform procedures unless immediately necessary to stabilize patient (e.g. hemorrhage control). Initiate all other procedures en-route to the trauma center.

Basic Life Support
- General Patient Care Protocol-Adult
- Secure airway/spinal immobilization if indicated
- Supplemental 100% oxygen if any respiratory symptoms
- Examine patient for obvious bleeding
- Control active bleeding with direct pressure
- Assess disability-neurologic status/record Glasgow coma score
- Head to toe examination to assess for injuries
- Restrain as needed

Advanced Life Support
- When conditions warrants (specified as “Full ALS Assessment and Treatment” in individual protocol)
  - Advanced airway/ventilatory management as needed
  - Perform cardiac monitoring
  - Record and monitor O2 saturation
  - Microstream capnography if any acute respiratory symptoms
  - IV 0.9% NaCl TQO/KVO or IV lock
    - If SBP < 90 mmHg, administer boluses of 0.9%NaCl at 250ml until SBP > 90 mmHg
  - Assess for Tension Pneumothorax
    - Tension pneumothorax should be suspected in patients who exhibit
      - Severe respiratory distress with hypoxia
      - Unilateral decreased or absent lung sounds (may see tracheal deviation away from collapsed lung field)
      - Evidence of hemodynamic compromise (e.g. shock, hypotension, tachycardia, altered mental status)
  - Pleural decompression for tension pneumothorax should only be performed when all 3 of the above criteria are present. If indicated perform pleural decompression at the 2nd intercostal space, midclavicular line
Appendix D

POLICY AND PROCEDURE MANUAL

DEFINITIVE CARE MANAGEMENT

MADISON FIRE DEPARTMENT

Date Effective: 11/11/02
Date Revised: 02/26/04
Page: 3 of 3
Bulletin No: 3.46

Part: EMERGENCY RESPONSE

Subject: RAPID INTERVENTION TEAM

Team Activation
The RIT Team will work directly with the distressed company, requesting information as to what happened and what is needed to remove them from the hazard. The RIT Officer will determine the best tactical approach to rescuing the distressed crew.

The Chief’s Aide will act as a liaison between the IC and the RIT. The Chief’s Aide will also act as a resource manager for the requests from the RIT Team. The Chief’s Aide will act in this capacity until replaced by another Chief Officer.

During rescue operations, the Communications Center will transmit an intermittent alert tone over the original fire ground channel to assist in locating the distressed crew.

The RIT sector will remain in effect until the RIT has removed the distressed crew to a place of safety outside of the building. The RIT Officer will notify the IC of this status immediately and the IC will call for a PAR.
# Appendix E

## Medical Plan

<table>
<thead>
<tr>
<th>1. Incident Name</th>
<th>2. Date Prepared</th>
<th>3. Time Prepared</th>
<th>4. Operational Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5. Incident Medical Aid Station

<table>
<thead>
<tr>
<th>Medical Aid Stations</th>
<th>Location</th>
<th>Paramedics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 6. Transportation

#### A. Ambulance Services

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Phone</th>
<th>Paramedics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### B. Incident Ambulances

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Paramedics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 7. Hospitals

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Travel Time (Air)</th>
<th>Travel Time (Ground)</th>
<th>Phone</th>
<th>Helped</th>
<th>Burn Center</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 8. Medical Emergency Procedures

Prepared by (Medical Unit Leader)  
Reviewed by (Safety Officer)
Appendix F

POSITION STATEMENT: Inclusion of Tactical Emergency Medical Support (TEMS) in Tactical Law Enforcement Operations.

In the Spring 1994 issue of The Tactical Edge magazine, NTOA published a final draft titled, “Position Statement on the Inclusion of Physicians in Tactical Law Enforcement Operations in the USA.” The following Position Statement is the final version of that original document:

The NTOA endorses and supports the incorporation of a well-trained and equipped Tactical Emergency Medical Support (TEMS) element into all tactical teams. Tactical Emergency Medical Support is the provision of preventative, urgent, and emergent medical care during high-risk, extended duration, and mission-driven law enforcement special operations. The ability of TEMS providers to develop medical threat assessments, render immediate medical care in austere environments, and provide logistical support will further the health and safety of law enforcement personnel and reduce the incidence of injury, illness, disability, and death associated with training and tactical operations. Therefore, the NTOA recommends that:

1. TEMS should be provided by specially trained pre-hospital emergency care providers operating within state and local EMS guidelines. Law enforcement agencies should request that EMS jurisdictions develop advanced scope of practice guidelines for use by TEMS providers.

2. The TEMS element should function at the advanced life support (“ALS”) level of care. If ALS services are unavailable, then TEMS should be provided at the highest level of care feasible.

3. A designated physician Medical Director with tactical knowledge and training should oversee a TEMS program. This Medical Director should oversee training, operational medical procedures, and the quality assurance program.

4. TEMS providers should undergo a formal training program in supporting law enforcement operations and trained providers should be required to undergo periodic retraining and skills reviews. This training should include, but not be limited to, tactical methods, techniques, equipment, tactical casualty care, and casualty extraction.

5. Once TEMS providers are fully trained and tactically operational, the ultimate goal should be that TEMS providers are deployed within the operational perimeter in proximity to tactical operations. Doing so permits rapid access to casualties, the opportunity to provide medical countermeasures, and enables TEMS providers to make recommendations to team leaders.

6. TEMS personnel should operate under written policies and procedures that address the selection and training of TEMS personnel, the chain of tactical medical command, and operational guidelines.

7. The effectiveness of a TEMS program requires its providers to be highly proficient in their medical and decision-making skills. To maintain levels of proficiency required of TEMS providers, they must have ongoing experience as field EMS providers.

8. Law enforcement agencies should provide TEMS providers with protections against civil liability, as well as compensation for work-related injury.

9. TEMS providers should serve as the consultants to commanders on matters of team health and safety and serve as the liaison between law enforcement operations and local health care providers. Further, the duties of the TEMS provider may also include nutrition, safety issues, and maintenance of team health records, including immunizations.
Appendix G

Radio Report Format

**Radio Call to an Emergency Department**

- Begin each transmission with the following:
- Agency name and unit number
- Triage category and triage level (e.g. Medical Red, STEMI Alert)
- Estimated time if arrival
- After the receiving facility acknowledges the initial information, give a concise report which include the following:
  - Repeat the triage category and triage level
  - Age and gender of patient
  - Chief Complaint or problem
  - Provide pertinent detail as to the following:
    - Vital signs
    - Glasgow Coma Score/level of consciousness
    - Mechanism of injury (if trauma)
    - Description of injuries (if trauma)
    - Treatment provided or under way
    - Any anticipated delay in transport (e.g., extrication)

**Medical Control Base Station Contact (TBA)**

- Contact OLMC for any additional orders needed to meet the patient's needs during on-scene care or transport
- Any quality concerns involving OLMC should be forwarded to the Office of the Medical Director for review as soon as possible.
Appendix H

Radio Report Format

For all EMS transported patients, in order to provide sufficient notification of the patient’s condition and estimated time of arrival, radio contact should be made with the receiving facility prior to arrival. When possible, radio contact should be made at least 5 minutes prior to arrival.

Use the following triage categories and triage levels (colors) to assist the receiving facility call taker in prioritizing incoming calls.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma</td>
<td>Indicates patient is a trauma patient</td>
</tr>
<tr>
<td>Medical</td>
<td>Indicates patient is a medical patient</td>
</tr>
<tr>
<td>Red</td>
<td>High acuity of illness or injury, unstable</td>
</tr>
<tr>
<td>Yellow</td>
<td>Serious condition, but not critical</td>
</tr>
<tr>
<td>Green</td>
<td>Low acuity of illness or injury</td>
</tr>
<tr>
<td>STEMI Alert</td>
<td>Meets STEMI criteria per Chest Pain protocol</td>
</tr>
<tr>
<td>Stroke Alert</td>
<td>Meets Stroke Alert criteria as per Stroke Protocol</td>
</tr>
<tr>
<td>Pediatric</td>
<td>Indicates patient is less than 18 years of age</td>
</tr>
<tr>
<td>Haz-Mat</td>
<td>Indicates patient was involved in a Haz-Mat incident</td>
</tr>
<tr>
<td>Code/PNB</td>
<td>Cardiopulmonary Arrest</td>
</tr>
<tr>
<td>MD’s Orders</td>
<td>Indicates physician orders are needed</td>
</tr>
</tbody>
</table>
Appendix I

Strategic Plan Template

1. Issues: Each stakeholder to list top 3 of importance.

2. Analysis: S.W.O.T., Boston Consulting Group (apply BCG to environment and or projects to invest in. (Timing), Situational Leadership (who on what team can assist us and how, Empowerment, Autonomy.)

3. Alternatives: Discussion of choices, possibilities, improvements to be made. Should remain forward-looking.


5. Implementation: (*This is where most plans fail!) How is the plan going to be achieved?

6. Continuous Quality Improvement: Regular meetings, notations, records, communications and stakeholder surveys.
Appendix J

Madison Fire Department Tactical Emergency Medical Service Communication Standard

Operating Guideline Draft

**Purpose:** To decrease the risk of harm to police officers, paramedics and citizenry alike, adherence to specific roles and responsibilities of patient care management communication and coordination shall take place with implementation of this Standard Operating Guideline during every tactical emergency medical event. The guidelines set forth are transferable to any emergency incident. Further, the positions, roles, and responsibilities shall be carried out by Madison Fire Department personnel proficient in each discipline. This non-rank specific. The designee “officer” indicates roles of decisional authority in the event supplemental personnel are assigned to a respective task.

**Deployment:** At the time of notification and throughout deployment, a medical control record will be maintained. To facilitate maximal flexibility, there are no fixed assignments and all team members train for and can fill any one of these three roles during an actual operation. For every TEMS event, a minimum of three TEMS, (or personnel of equivalent skill and capabilities) shall be deployed and assigned one of the following roles:

**Medical liaison/communications officer.** The communications officer serves as the team leader and is responsible for planning of the medical support needed for the operation. While on scene, the communications officer’s responsibilities include acting as a liaison between the SWAT team and local EMS agencies, communicating with the receiving trauma center, and in a multi-casualty situation, serving as the triage officer and aiding in the evacuation of the injured should the extraction officer require assistance. In essence, the communications officer ensures that while on the scene, the remaining members of the medical team can concentrate on proper treatment and rapid evacuation of the patient.

**Extraction officer.** The extraction officer is responsible for immobilization, movement, and evacuation of the patient from the scene. Before the mission, this person plans all routes of travel from the scene to the nearest trauma center or tertiary care facility. In the event of air medical evacuation, the extraction officer may confer with the medical liaison and designates landing zones and all routes of travel to that site.

**Entry/treatment officer.** The entry/treatment officer is responsible for evaluation and care of the patient. This person’s sole focus is the patient, and no matter what else is going on with the mission, the treatment officer is to ensure optimal care is given to the injured personnel on the scene.

*All MFD policies, procedures, and protocols shall be adhered to with the implementation of this SOG.*
Appendix K

Proposed TEMS Quality Function Deployment Survey parameters. Use of this tool shall be explained during SWAT/TEMS monthly meetings and referred to for quality improvement planning. These parameters may be modified as SWAT/TEMS committee dictates.

Quality Function Deployment Considerations

A data/survey instrument which is an excellent tool for continuous quality improvement focuses on the below factors which directly affect quality and success. A quality survey tool must provide for:

-可靠性
-响应性
-保证
-同理心
-有形的

Shareholder perspectives to be considered:

1. Supervisor Measures
   a. Number of years supervising
   b. Level of education, licensure, etc.
   c. Number of years practicing

2. Officer/Medic Measures
   a. Concerns/complaints
   b. Officer/Medic evaluations
   c. Officer/Medic mentors/peers

3. Industry Measures
   a. Industry Comparable
   b. Content/courses/resources

4. Institutional Measures
   a. How MPD prepared for MFD
   b. Paramedic/Officer retention methods

5. Professional Measures
   a. Conferences in related fields
   b. Training in teaching skill development

6. Service measures
   a. Medical delivery Techniques,
   b. Periodic evaluations
   c. Mentors for team instructors
   d. Tactical performance

7. Environmental Measures
   a. Peer collaboration
   b. Network for competitive training curriculum
   c. Standards

8. Organizational Measures
   a. Training environment
   b. Teaching delivery techniques, experts, etc.
   c. Evaluation tools
   d. Medic/officer mentors

9. Communication Measures
   a. Transfer of data
   b. Record retention
   c. Sharing of ongoing data
   d. Review and update of curriculum and data.