Taking Charge:

Initial EMS Response and Establishing the Medical Group

at a Mass Casualty Incident

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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

A mass casualty incident can be a chaotic and dynamic incident that stretches the resources of a community beyond the norm. This type of incident is a low frequency event with high life hazard consequences. It is imperative that initial Emergency Medical Services (EMS) providers be trained in the handling of such incidents. The problem is, during the Harrisburg International Airport's Triennial Emergency Plan exercise, the majority of EMS providers did not have the requisite knowledge and skills to establish a medical group within an incident command system at a mass casualty incident.

The purpose of this research is to determine the training needs of the EMS community in order to obtain the knowledge and skills necessary to establish a medical group in an incident command system. The literature review discovered a wealth of current and applicable knowledge on the subject of mass casualty incidents (MCI) and incident command systems (ICS). A questionnaire was distributed to EMS providers in the South Central Region of Pennsylvania to assist in answering the following research questions:

1. What knowledge and skills are necessary for the initial EMS providers to establish a medical group at a mass casualty incident in the incident command system?
2. What knowledge and skills are necessary for the remaining EMS providers to establish a medical group at a mass casualty incident in the incident command system?
3. What training delivery method(s) would be best to provide incident command systems/mass casualty training for the initial EMS provider?
4. How frequent should incident command systems/mass casualty training for the initial EMS provider be delivered to EMS providers in order for them to remain knowledgeable and proficient?

The action research method was used to develop a training curriculum to provide the necessary knowledge and skills to establish a medical group for a mass casualty incident in the incident command system.

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Taking Charge: Initial EMS Response and Establishing the Medical Group at a Mass Casualty Incident

Introduction

A mass casualty incident of any size is a stressful event on first responders and emergency service organizations. The initial first responders will be arriving at a scene of utter chaos and experience the stress of rapid decision-making that may have life or death consequences. In some cases, the initial first responders will become overwhelmed by the sheer dynamics of the incident and needs of the many victims. In order to overcome the feeling of being overwhelmed and develop order out of chaos, the implementation of the incident command system will establish a structure to control and assign resources to where the needs are.

Many first responders are trained and comfortable with responding to incidents of a routine nature, such as medical emergencies, fires, or automobile accidents; but a mass casualty incident with patients numbering in the dozens will require the first responder to use knowledge and skills that are not used regularly, which may result in poor decision-making and ineffective use of resources. This was evident during the Triennial Airport Emergency Plan Exercise at Harrisburg International Airport on September 18, 2010.

The problem is, during the Harrisburg International Airport's Triennial Emergency Plan exercise, the majority of EMS providers did not have the requisite knowledge and skills to establish a medical group within an incident command system at a mass casualty incident. The problem was determined by interviewing exercise evaluators and initial first responders. A common theme of a lack of knowledge and skills in establishing or participating in the medical group of the incident command system was a problem.

The purpose of this research is to determine the training needs of the EMS community in order to obtain the knowledge and skills necessary to establish a medical group in an incident command system. The results of this research will be used to develop a curriculum to teach EMS providers on how to respond and react to the dynamic environment of a mass casualty incident and to determine the amount and frequency of training needed to remain proficient in handling a mass casualty incident.

The research method used will be the action research method in the development of a training curriculum to provide the necessary knowledge and skills to establish a medical group for a mass casualty incident in the incident command system. The research will be accomplished by analyzing data from a questionnaire completed by EMS personnel to determine their training needs with information also gathered from journal articles, regional protocols & plans, current mass casualty incident curriculum, and incident command systems curriculum.

The research questions to be explored are as follows: 1) What knowledge and skills are necessary for the initial EMS providers to establish a medical group at a mass casualty incident in the incident command system? 2) What knowledge and skills are necessary for the remaining EMS providers to establish a medical group at a mass casualty incident in the incident command system? 3) What training delivery method(s) would be best to provide ICS/Mass Casualty Training for the initial EMS provider? 4) How frequent should ICS/Mass Casualty Training for the initial EMS provider be delivered to EMS providers in order for them to remain knowledgeable and proficient?

Background and Significance

Harrisburg International Airport (HIA) is located in the South Central Region of Pennsylvania, which provides aviation services to both business and recreational travelers. Nearly 1.3 million passengers used Harrisburg International Airport in 2011 (Susquehanna Area Regional Airport Authority, 2012). The HIA complex is comprised of approximately 760 acres of land with a 10,000 foot Runway that runs parallel to the Susquehanna River (Susquehanna Area Regional Airport Authority, 2008).

The Harrisburg International Airport Fire Department (HIAFD) provides Aircraft Rescue Fire Fighting (ARFF) Services to the customers that fly in and out of HIA on a daily basis. The HIAFD provides Index "B" coverage per Federal Aviation Regulation Part 139 composed of 13 personnel, with four shifts of two firefighters, and a Captain or Lead Firefighter, in addition, to the Fire Chief.

The ARFF Index coverage for an airport is determined by the length of an aircraft and the number of daily scheduled departures. At HIA, the predominant aircraft that frequent the airport are categorized as Index "B," being 96 feet to 126 feet in length (Federal Aviation Regulation Part 139, 2004). The aircraft that are categorized as Index "B" aircraft can carry a passenger load of approximately 50 to 150 passengers. As proven in the past, a low impact aircraft accident can result in a mass casualty incident of large proportions, quickly overwhelming local EMS providers and other first responders.

An airport statistically has a greater potential to experience a mass casualty incident due to the use of aircraft, which can carry many people at high rates of speed. This is evident in statistics from the Boeing Corporation which show that 47% of aircraft accidents that result in fatalities occur while the aircraft is on the ground, taking off, or landing (2011). While aircraft

are designed to experience extraordinary stresses in order to fly, they do not withstand the many forces exerted during a crash, and easily fracture or disintegrate depending on the speed at which the aircraft was traveling at the time of the crash. Aircraft accidents occurring during takeoff and landing in close proximity to the airport result in low-impact crashes, which will have a high likelihood of survivors, while a high-impact crash will most likely result in mass fatalities.

At an aircraft accident, the primary purpose of ARFF personnel is to ensure the safety of aircraft occupants and crew (Fortney & Clausing, 2008). This is accomplished by providing a means of egress for the survivors of an aircraft accident involving fire, or in the event of an aircraft accident without fire, to provide rescue services. Any aircraft accident resulting in a mass casualty will require additional fire, rescue, and EMS resources. Harrisburg International Airport relies on local mutual aid fire, rescue, and EMS organizations to assist in providing the resources needed to successfully mitigate an aircraft accident.

Federal Aviation Regulation Part 139 requires that certificate holding airports conduct an airport emergency plan exercise triennially to ensure that the emergency plan is realistic, reliable, and current (2004). In conducting previous airport emergency plan exercises, the emergency medical response has been successful because there were EMS chiefs or supervisors that filled the role of being in charge of the EMS response and participated in unified command with previous knowledge and skills in the incident command system at a mass casualty incident. During the triennial drill of 2010, this knowledge and skill was missing, which resulted in a lack of coordination and inefficient distribution of resources.

All future airport emergency plan exercises will have a mass casualty component built into the scenario because an actual aircraft accident will most likely result in a mass casualty incident to some degree. It is for this reason that all first responders, not just supervisors and

chiefs that respond to a mass casualty incident, must have the knowledge and skills in dealing with a mass casualty incident. In most cases, the initial EMS unit to arrive on the scene of a mass casualty incident will not be a supervisor or chief; but it will be the EMS provider on a transport unit. For first responders to be successful in accomplishing their mission of protecting lives and property, the basic structure of the incident command system must be established in order to transition the incident from an utterly chaotic situation into an effective system of resource management and communications for a successful mitigation of the incident.

The Executive Analysis of Fire Service Operations in Emergency Management course demonstrated and highlighted the importance of establishing the incident command system in the operational settings of the incident scene and at emergency operations centers (United States Fire Administration, 2011). The establishment of the incident command system at any incident can have a positive impact on safety and in reducing harm and loss of life to all survivors and first responders to all incidents, not only mass casualty incidents.

Literature Review

Mass casualty incidents and incident command are topics frequently published and discussed in the emergency services community. Much of the published material about mass casualty incidents refers to the use of the incident command system as an integral, if not, absolute necessity in dealing with mass casualty incidents and for good reason. But, there are many other processes, procedures, needed resources, and aspects of a mass casualty incident that will be explored first.

There are several definitions of what a mass casualty incident is, but all of them in summary define a mass casualty incident as an incident where the number of patients overwhelms the initial resources available in a community (Emergency Health Services

Federation & South Central Task Force, 2007; Fagel, 1994; Goldfarb, 1998; Ludwig, 1998). Mass casualty incidents can also be broken down into two types, one being man-made/technical disasters, such as transportation accidents, power failures, weapons of mass destruction, and hazardous materials releases; the other being natural disasters, such as tornadoes, floods, earthquakes, and hurricanes. The typing of mass casualty incidents is helpful in the preplanning process for mass casualty incidents because of the distinct needs and hazards presented by them (Ludwig, 1998; Christen & Maniscalco, 2002).

Mass casualty incident preplanning helps to identify target hazards and the threats they may face. By preplanning, a gap analysis can be conducted, which looks at what resources are available and those that could potentially be needed to address a particular threat to a target. These resources can include which agencies and organizations are needed to respond in order to address the needs of a disaster and the physical resources that are needed by response organizations to mitigate the situation (Owens, 2012; Christen & Maniscalco, 2002). It is also important for all responders to be aware of the resources available in their own community or region in order to ensure that the closest and quickest resources are utilized to provide efficient care (Mack, 2011).

In addition to agency, organizational, and physical resource needs being preplanned, there is a need to address the procedural and management needs of an incident, such as communications between units, notifications of agencies and organizations, and recognizing the need to build first responder, patient, and community safety into all aspects of planning (Fagel, 1994).

The South Central Task Force and Emergency Health Services Federation of South Central Pennsylvania have recognized this need for preplanning and developed the *South Central*

Pennsylvania Regional Mass Casualty/Mass Fatality Incident Response Plan, which provides a list of definitions in order to make the plan compliant with the National Incident Management System for common terminology, the incident command structure, mass casualty field operations, mass casualty hospital operations, and mass fatality operations (2007). Because this plan does not address specific target hazards or threats, the plan provides the key element of flexibility, which is needed for any good plan to be successful (Ludwig, 1998).

Even with good preplanning, when a mass casualty incident does occur, there must be a deliberate thought process to ensure that the plan will be implemented in a thoughtful manner. This process is commonly referred to as size-up. One of the first issues to be evaluated is to determine what the cause of the mass casualty incident was in order to address any first responder safety issues, such as scene safety and appropriate personal protective equipment. Determining cause can also identify measures that can stop further harm and anticipate the possible escalation of the incident (Mack, 2011; Owens, 2012).

Size-up should also include an estimate of the number of patients and breakdown of the severity/mechanism of injuries. This information does not need to be precise, but rough numbers will be useful for the initial first responder in deciding the number and type of resources that will be necessary to handle the mass casualty incident at hand. Also, this information needs to be transmitted to the public safety answering point so that other agencies and organizations, which can be of assistance, such as hospitals, the coroner, and emergency management, are notified in a timely manner to prepare for the needs demanded of them at a mass casualty incident (Goldfarb, 1998; Mack, 2011; Owens, 2012).

The requesting of resources is dependent on the mass casualty incident needs, what is realistically available in ones community from a pre-hospital and hospital perspective, and

proximity to medical facilities. It is realistic to request additional resources in order that each patient has an emergency medical provider for proper treatment, with the exception of the walking wounded. It is also important to assign basic life support and advanced life support in accordance with the level of care necessary for the severity/mechanism of the patient's injuries. When it comes time to move patients to the treatment area, the number of resources can increase dramatically. In order to move a patient it only requires a provider to coordinate packaging and movement while those assisting can be those with little or no medical training, such as firefighters, police officers, or civilians (Mack, 2011; Owens, 2012).

With the dynamics, needs, and chaotic environment that are part of a mass casualty incident there must be a system put in place to coordinate and manage the resources coming to bear on the incident. That system is the incident command system (ICS), of which the primary purpose is to establish a standardized form of order into what has or may become a chaotic situation (Ludwig, 1998).

Mass casualty incidents are overwhelming events, which require the immediate establishment of incident command and the implementation of key positions of ICS. A primary doctrine of ICS is that the first responder to arrive on the scene of an incident is to be designated the incident commander (IC). The incident commander's responsibility is to set the foundation of incident management by assigning the key positions needed to address the incident at hand (Governor's Office of Emergency Services – Firescope, 2007; Owens, 2012).

Many mass casualty incidents require the response of multiple agencies/disciplines with statutory authority in order to bring the incident to a successful conclusion and in some cases involve multiple jurisdictions and/or levels of government. In these cases, it is recommended to establish unified command in order to address the needs of the incident and the requirements of

responding agencies and organizations (Governor's Office of Emergency Services – Firescope, 2007; Owens, 2012).

The incident commander of a mass casualty incident must not only fill key positions in the ICS structure, but needs to be aware of assigning individuals, which have the necessary qualifications and experience to fulfill the needs of the position they are assigned. This can be an issue in emergency services organizations that are based on a rank structure, which may not be synonymous with qualifications and experience. The role of incident commander, as with all positions in ICS, is to be filled with individuals that know their responsibilities and can get the job accomplished (Governor's Office of Emergency Services – Firescope, 2007; Owens, 2012; Mack, 2011).

The incident commander is responsible for overall management of the incident, but no one individual can do all the tasks necessary to effectively manage an incident, let alone a mass casualty incident. It is important that the incident commander delegate specific roles and responsibilities to others in order to develop a command structure. The basic incident command structure is made up of command staff and general staff. The command staff consists of the safety officer, liaison officer, and the public information officer. The general staff consists of the operations section, logistics section, planning section, and finance/administration section (Governor's Office of Emergency Services – Firescope, 2007).

The incident commander is to fill those staff positions, which are necessary to handle the incident at hand. On almost all incidents, the positions of operations and safety officer will be filled, but it would be uncommon to fill the position of finance/administration at an incident. It should be noted that the hazards and risks presented to emergency responders at a complex incident, like that of a mass casualty incident, require the assignment of safety officer, and

possibly assistant safety officers because of their complexity and area involved (Christen & Maniscalco, 2002). Dependent on the magnitude of the mass casualty incident it may not be necessary to assign an individual to every staff position, but those that are not filled are the responsibility of the incident commander (Governor's Office of Emergency Services – Firescope, 2007).

As it pertains to a mass casualty incident in the initial stages, the incident commander needs to decide on the appropriate structure for the incident. The incident command system provides a structure that can easily expand and contract for the needs of the incident. From an EMS functional perspective the establishment of an EMS branch or EMS group under the operations section is appropriate depending on the circumstances and magnitude of the incident (Owens, 2012).

An EMS branch is appropriate when multiple medical groups are established because of the magnitude of the incident, there is a physical barrier requiring the establishment of multiple medical groups, or the incident area is of a size that multiple medical groups are necessary. Many mass casualty incidents are of a magnitude that the establishment of a medical group is sufficient for the incident, but the option of expanding to a medical branch is available, if warranted (Owens, 2012). For the sake of simplicity the group designation will be recognized as the optimal ICS position for the medical function throughout this research paper.

The medical group supervisor has the responsibility of determining priorities, assign tasks to personnel, request additional resources, direct and supervise personnel, and establishes/designates unit leaders (Governor's Office of Emergency Services – Firescope, 2007; Owens, 2012). All of these responsibilities are of importance, but the early establishment and

designating of unit leaders is important in order to develop a management structure that has command and control of physical resources and personnel (Brazle, 2001).

Quick establishment of the "Big Four" of a mass casualty incident, which are staging, triage, treatment, and transport, are important to having an effective and efficient incident command structure at a mass casualty incident. The medical group supervisor needs to prioritize the establishment of the "Big Four." One of the initial positions to be established is the location of a staging area and assigning a staging manager. The response of numerous resources can quickly overwhelm the medical group supervisor if they are not managed immediately. Staging provides a location to place resources not given an assignment. The responsibilities of the staging manager are to organize apparatus parking within the staging area, keep track of resources, and maintain designated resource levels (Goldfarb, 1998).

Just before or after the establishment of the staging area the medical group supervisor must establish the triage unit and assign a triage unit leader. Triage is the French word for "to sort" and the most recognized triage system is the Simple Triage and Rapid Treatment (START) system (Owens, 2012). It is imperative that the patients of the mass casualty incident are prioritized into four categories dependent on the severity of their injuries. The triage categories and their corresponding colors are Immediate/Red, Delayed/Yellow, Minor/Green, and Deceased/Black (Christen & Maniscalco, 2002).

It is imperative to assign a triage unit leader to coordinate and supervise the triaging of patients in order make sure the most severe patients receive treatment before less severe patients and to make best use of emergency medical resources. If not, EMS providers may treat patients as they get to them resulting in the ineffective use of EMS resources (Christen & Maniscalco, 2002).

The medical group supervisor must also address the function of treating patients by establishing the treatment unit and assigning a treatment unit leader. Some of the responsibilities of the treatment unit leader are the location of treatment areas, the on-site morgue (if needed), and obtaining the necessary physical and human resources to treat patients (Cotter, 2006). The treatment unit leader, when determining the location of treatment areas, must take into account the weather because exposure to the elements may result in a situation more dangerous to patients than the injuries they had sustained from the mass casualty incident (Owens, 2012). The treatment unit leader will be in charge of treating all patients in need of varying degrees of care if delegation does not take place (International Fire Service Training Association, 1980).

As discussed earlier, patients will be triaged into the categories of immediate, delayed, and minor. It is important for the treatment unit leader to assign individuals to the positions of immediate treatment area manager, delayed treatment area manager, and minor treatment area manager. Staffing levels will vary for the treatment areas due to the need for more providers for the more seriously injured versus the patients with minor injuries. If a morgue area is established, it is to be isolated from the treatment areas and assigned a morgue manager (Governor's Office of Emergency Services – Firescope, 2007; Cotter, 2006).

As the treatment areas are established and patients receive care the last of the "Big Four," the patient transportation unit must be established. The patient transportation unit leader's responsibility is to coordinate the transport of patients from the treatment area to hospitals or medical centers. The focus of this coordination is to make sure no medical facilities are overwhelmed with patients and that patients are transported to medical facilities that are best suited to provide care to patients. Another responsibility of the patient transport unit leader, is the tracking and documentation of patients from the mass casualty incident to the medical facility.

This can be accomplished using electronic tracking systems, triage card systems, or hand written documentation. It is dependent on the system utilized in your community through preplanning (Owens, 2012; Goldfarb, 1998).

There are various forms of transportation the patient transportation unit leader can choose from to transport patients and they are ambulances, buses, and air ambulance. The advantage of air ambulance over ground transportation is the ability to transport patients to medical facilities greater distances away from the incident and still accomplish transport in a reasonable time. The disadvantage to air transport is that it is dependent on good weather in order to fly. Proper safety precautions must also be addressed with proper landing zone coordination and fire protection needs addressed. Buses are an excellent means of transporting patients with minor injuries to medical facilities while not overburdening ambulances with patients (Owens, 2012; Goldfarb, 1998).

In order to coordinate the transport of patients to medical facilities, it is important that the patient transportation unit leader communicates with hospitals and medical centers to determine the number of beds and the category of patients they can receive and treat. In order to assist the patient transportation unit leader a medical communication coordinator can be assigned and can accomplish those responsibilities of communicating with the medical facilities and requesting air ambulance resources. Another position which can be helpful to the patient transportation unit leader is the ambulance coordinator, which is responsible for assigning ambulances from the staging area as requested to other areas. The ultimate responsibility of the patient transportation unit is getting the right patient, in the right mode of transportation, to the right medical facility. (Owens, 2012; Goldfarb, 1998).

As stated previously, when filling the incident command positions, such as the medical group, it is important to assign individuals that have the appropriate qualifications and experience in order to fulfill the duties and responsibilities of that position. In addition to ICS qualifications and experience, when assigned to the medical group, a certain set of skills and knowledge are necessary to perform in the medical field. For this reason, it is important that all personnel assigned to unit leader positions be at least trained to the emergency medical technician (basic life support) level and the treatment unit leader at least to the paramedic (advanced life support) level (Goldfarb, 1998).

Another aspect of mass casualty incidents, as it pertains to ICS, that needs to be addressed, is to make sure that the command and general staff has the emergency medical field experience and knowledge to deal with a mass casualty incident. This can be accomplished by having a deputy operations section chief with emergency medical background or the establishment of unified command with EMS being represented in the command post (Olszewski, 2010).

There are many training courses available to teach emergency service personnel on how to handle mass casualty incidents, establish incident command, and perform the various functions needed during a mass casualty incident, but the various training methods used to teach this material can make the difference between the knowledge of how it is to be done and the success of doing it correctly. Many classes, especially those that are computer based, while inexpensive and easy to accomplish, do not demonstrate the interpersonal dynamics and management skills necessary to conduct mass casualty incident operations (Owens, 2012).

The best way to reinforce learned principles is to place them in action, in order to remember them during an incident (Brazle, 2001). There are several methods available to apply

the lessons learned during training, such as a table top exercise, drill, functional exercise, and full-scale exercise. The table top exercise is a means of simulating an incident using a scenario and working through problems. Drills are hands-on and test one aspect or function of an incident. Functional exercises are an opportunity for individuals in leadership positions of various agencies or organizations to command, control, and coordinate between themselves. The full-scale exercise is a hands-on scenario with all levels of responders participating in activities that would happen in a real incident, as realistically as possible. The type of exercise is dependent on the availability of physical resources, personnel, funding, and time (Owens, 2012).

Any type of mass casualty drill or exercise can be used to test a particular function or aspects of managing the mass casualty incident. They should not over emphasize specific tactics, such as treatment or other tasks, which are routine in nature. The exercise or drill must have an objective purpose to test management skills and/or procedures to deal with a mass casualty incident (Christen & Maniscalco, 2002).

In order to address concerns and highlight positive results after the completion of an exercise or drill, there is a critique, after action report, and/or post-incident analysis conducted. A critique, after action report, and/or post-incident analysis are used to discuss the strengths and weaknesses of the internal functions, processes, or procedures in mitigating the incident. Also, they can be used to discuss any external issues, such as opportunities to improve the response or challenges that were faced by responders during the exercise or drill and suggest solutions to overcome them (Christen & Maniscalco, 2002; Owens, 2012).

The stress of a mass casualty incident and the demands of the positions in ICS will test an individual’s ability to remember the duties and responsibilities of a given ICS position. In order to assist individuals in remembering those duties and responsibilities, there have been checklists

and forms developed for many of the ICS positions, such as the California Governor's Office of Emergency Services – FIRESCOPE: Field Operations Guide (FOG) (2007) and Multi-Casualty ICS from the International Fire Service Training Association (1980). It should be noted that checklists should be designed with flexibility in mind and the first responder must always be thinking about the needs of a particular incident. A checklist will not address all needs and surprises during an incident and for that reason critical thinking must be done to make sure all needs and problems are addressed (Governor's Office of Emergency Services – Firescope, 2007).

In order that emergency responders remain familiar and proficient in the use of ICS, it is highly recommended, that ICS not only be relegated to the large incidents that occur rarely and infrequently. It would be useful and productive to consider using ICS on every incident, even single unit emergency medical responses, so that all first responders remain knowledgeable and skilled in the use of ICS (Erich, 2007; Owens, 2012).

Procedures

In order to address the research questions of this paper, a literature review was conducted and a questionnaire was developed and distributed to EMS providers in the South Central Region of Pennsylvania. The literature review was conducted using journal articles and books to answer key points of the research questions pertaining to training, mass casualty operations & management, incident command systems, and mass casualty planning. The resources gathered for the literature review were first obtained in the Learning Resource Center at the National Emergency Training Center. Additional resources were obtained from the Harrisburg International Airport Fire Department's Training Office and my personal library. The literature

review was instrumental in the development of the research questionnaire and gaining knowledge on the research topic.

A questionnaire titled Questionnaire on EMS ICS and Mass Casualty Incidents (Appendix A) was developed to assess the questionnaire participants on their EMS experience and training levels, mass casualty training, mass casualty experience, incident command system training, incident command system experience, mass casualty planning, and training delivery methods. The author developed the questionnaire, which was then reviewed for content and structure by Chief Donald Cox, Executive Fire Officer Program Applied Research Paper Evaluator; Scott Buchle, Operations Manager for Life Lion EMS; and Steve Lyle, Executive Director of Emergency Health Services Federation. Comments were taken and changes were made to improve the questionnaire.

The questionnaire was then placed on an internet survey site and was pilot tested with six EMS providers to evaluate the competency of the questionnaire, to estimate the time to take the survey, and to determine the quality of the surveyor. (Iraossi, 2006). Comments were taken and changes were made to improve the survey.

Participants were solicited by contacting the Emergency Management Agencies for the nine county region of South Central Region of Pennsylvania (Adams, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Franklin, Perry, and York Counties), in order to distribute the internet link for the questionnaire to all emergency medical agencies and organizations within the South Central Region of Pennsylvania, via email. The email requested that all recipients participate in completing the questionnaire and distribute the questionnaire to all EMS providers in their respective EMS organization. In addition, the questionnaire was placed on the Emergency Health Services Federations ListServ notification site and placed on an internet

forum site titled “Central PA Fire forums.” The questionnaire survey internet site was active for approximately 45 days.

The limitation of the questionnaire was that it requested voluntary participation, which does not represent a true representation of all EMS providers because those that participated are likely to be more enthusiastic and knowledgeable EMS providers than those that are relatively new to EMS and would not participate.

Results

The total number of responses to the questionnaire was 150 EMS providers and of those 14 did not complete the questionnaire. Because their responses were not complete they were filtered out for a total of 136 completed questionnaires. Out of the 136 completed surveys received, 7 participants answered they were not affiliated with an EMS organization in the South Central Region in Pennsylvania and were directed to discontinue the questionnaire. This resulted in 129 participants that completed the entire questionnaire. The questionnaire first addressed basic information about the participants that completed the surveys. The certification level of the participants was primarily Emergency Medical Technician or Paramedic at 95.3% of questionnaire participants. A distribution of certification levels is shown in Figure 1. The experience level of the participants was primarily 20+ years in EMS, which is shown in Figure 2.

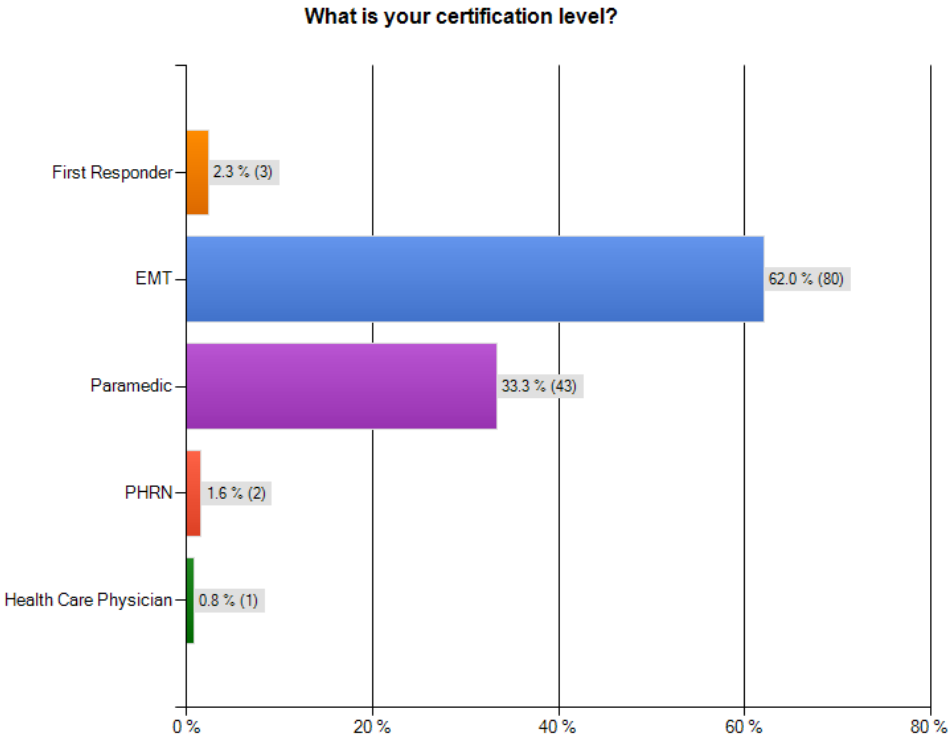


Figure 1. *Certification Level of Questionnaire Participants.*

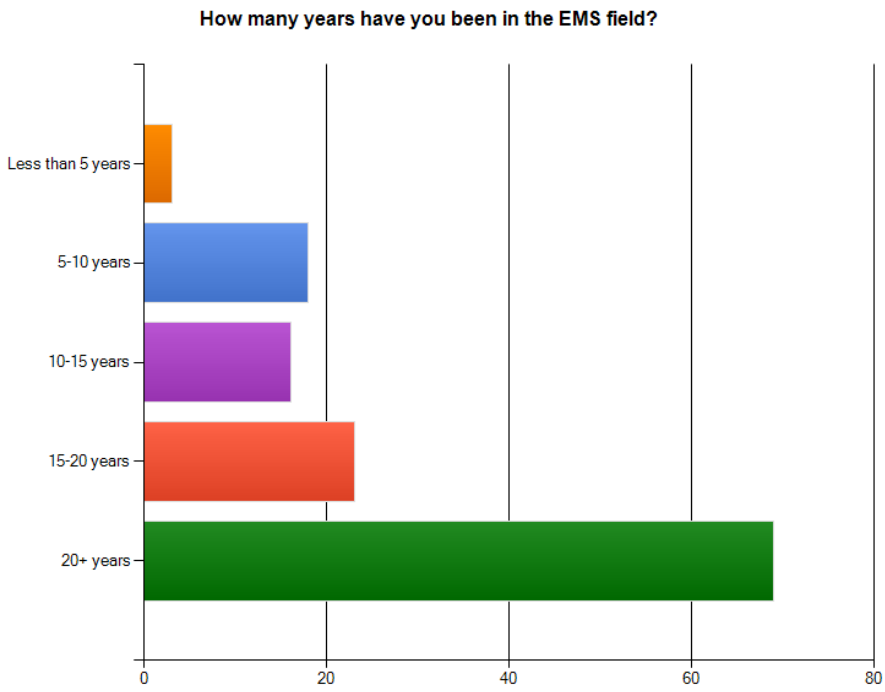


Figure 2. *Experience Level of Questionnaire Participants.*

The second segment of the questionnaire dealt with the mass casualty training participants had received. The initial training an individual receives in their EMS certification level course will establish the basic information one will build upon during their entire EMS career. Over a quarter of participants had received less than an hour or no mass casualty training at all during their certification level course, while nearly 50 percent had received 1-4 hours of instruction and 22.5% had received in excess of 6 hours of instruction as shown in Figure 3. Annual training participants had received on mass casualty incidents was over a quarter of participants had received less than an hour or no mass casualty training at all during their certification level course, while nearly 50 percent had received 1-4 hours of instruction and 18.6% had received in excess of 6 hours of instruction as shown in Figure 4.

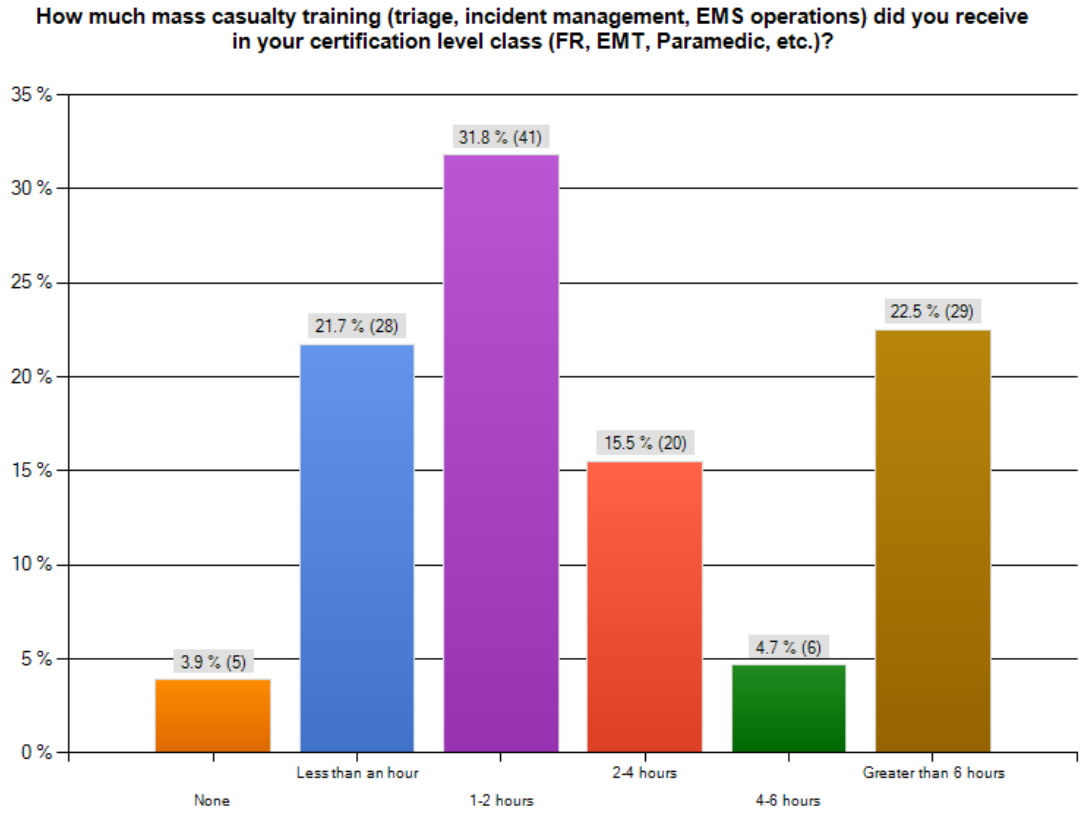


Figure 3. *Mass Casualty Training during Certification Level Class.*

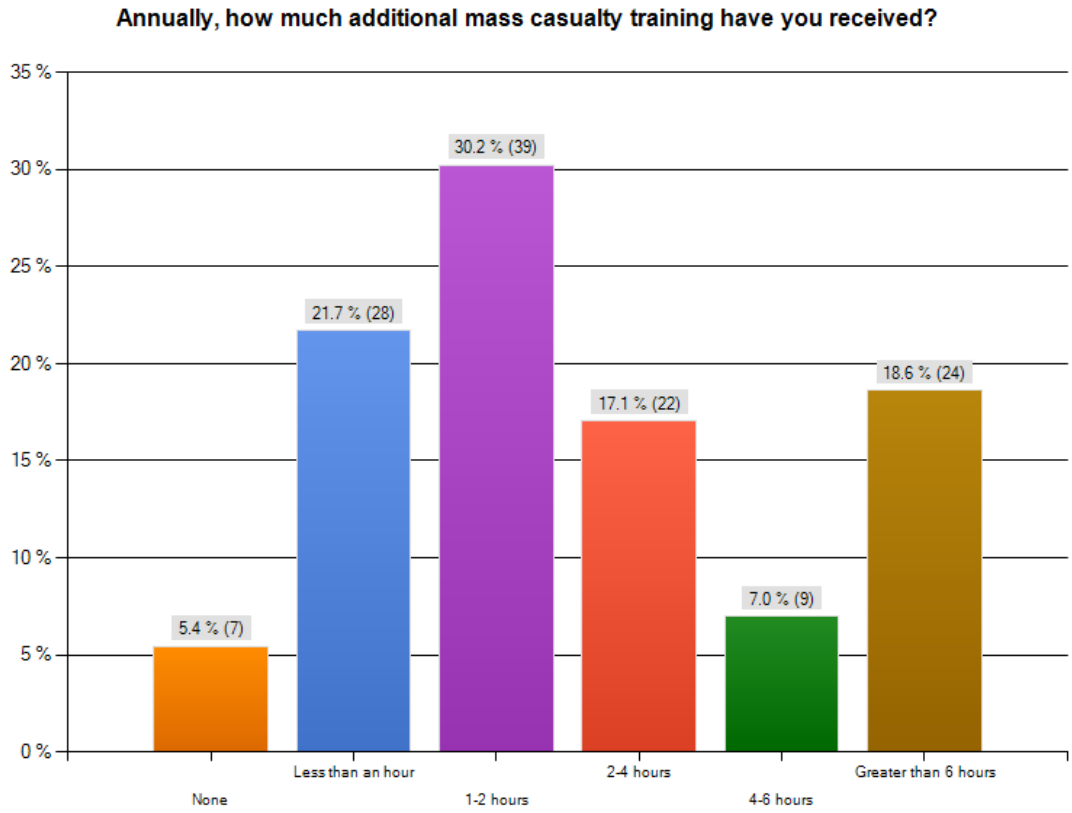


Figure 4. *Annual Mass Casualty Training.*

The annual mass casualty training participants had received had varied, but the most common was triage training (SMART/START) at 93.7% and mass casualty operations training at 64.6%. The remaining training topics are noted in Figure 5.

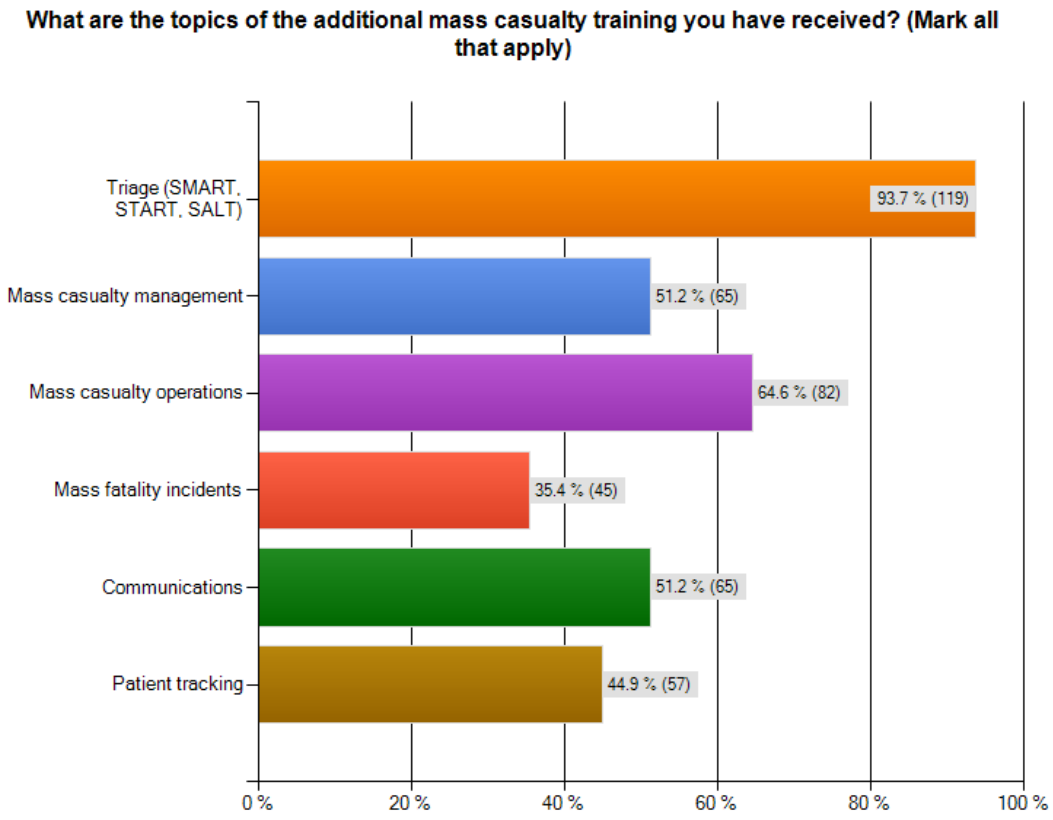


Figure 5. *Annual Mass Casualty Training topics.*

The mass casualty training conducted in the South Central Region of Pennsylvania was rated as excellent or good by 55.2% of participants and fair or poor by 20.4% of the participants. The remaining 24.4% responded “Not Applicable” due to their training being conducted out of region. Some of the notable mass casualty training conducted in the region had been training conducted by A.J. Heightman on mass casualty incidents and the SMART/START triage training conducted or sponsored by the Emergency Health Services Federation.

The third segment of the questionnaire dealt with participant mass casualty experiences. A large number of participants had participated in mass casualty drill/exercise at 91.5%, with 10.9% percent of those feeling they were not prepared from a knowledge and skills perspective to deal with the mass casualty incident. When asked if participants had been a first responder to

an actual mass casualty incident 81.4% responded they had and 7.8% percent of those felt they were not prepared from a knowledge and skills perspective to deal with the mass casualty incident. When asked what particular knowledge or skills were lacking prior to the drill or incident, over 1/3 of the participants stated the following would have been helpful knowledge or skills as shown in Figure 6: resources available, patient tracking, hospital mass casualty plans, and mass casualty incident management.

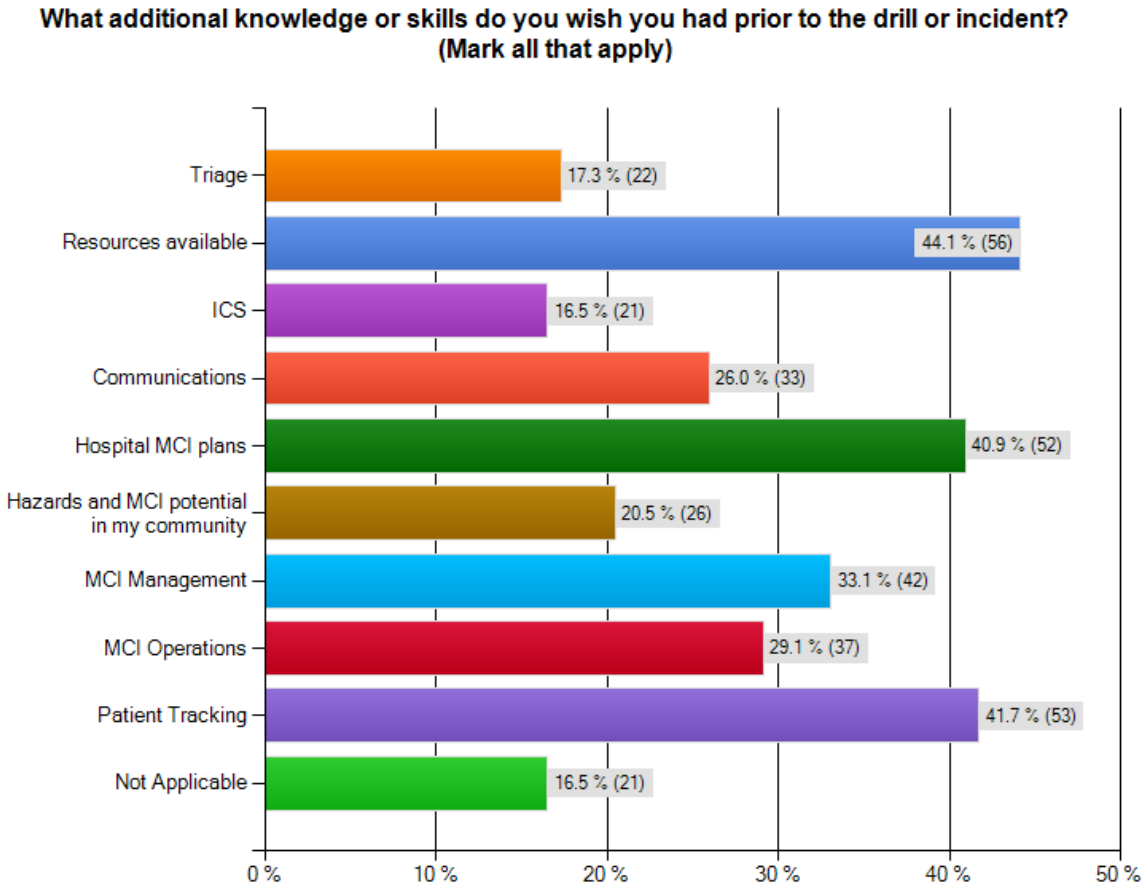


Figure 6. *Mass Casualty Knowledge and Skill Needs.*

The fourth and fifth segment of the questionnaire dealt with ICS training and experience. The highest ICS training level most prevalent among the questionnaire participants was ICS-400: Advanced Incident Command with 54.3%, the next highest was ICS-200: Basic ICS with 23.3% and 2.3% not having attained any ICS training at all. The distribution of highest level of ICS training is shown in Figure 7. The rating of ICS training in the region is 62.8% of participants rated it as excellent or good and 18.7% rated it as fair or poor. One person (0.8%) rated ICS training as having no value. The remaining participants marked “Not Applicable” and received ICS training out of the region.

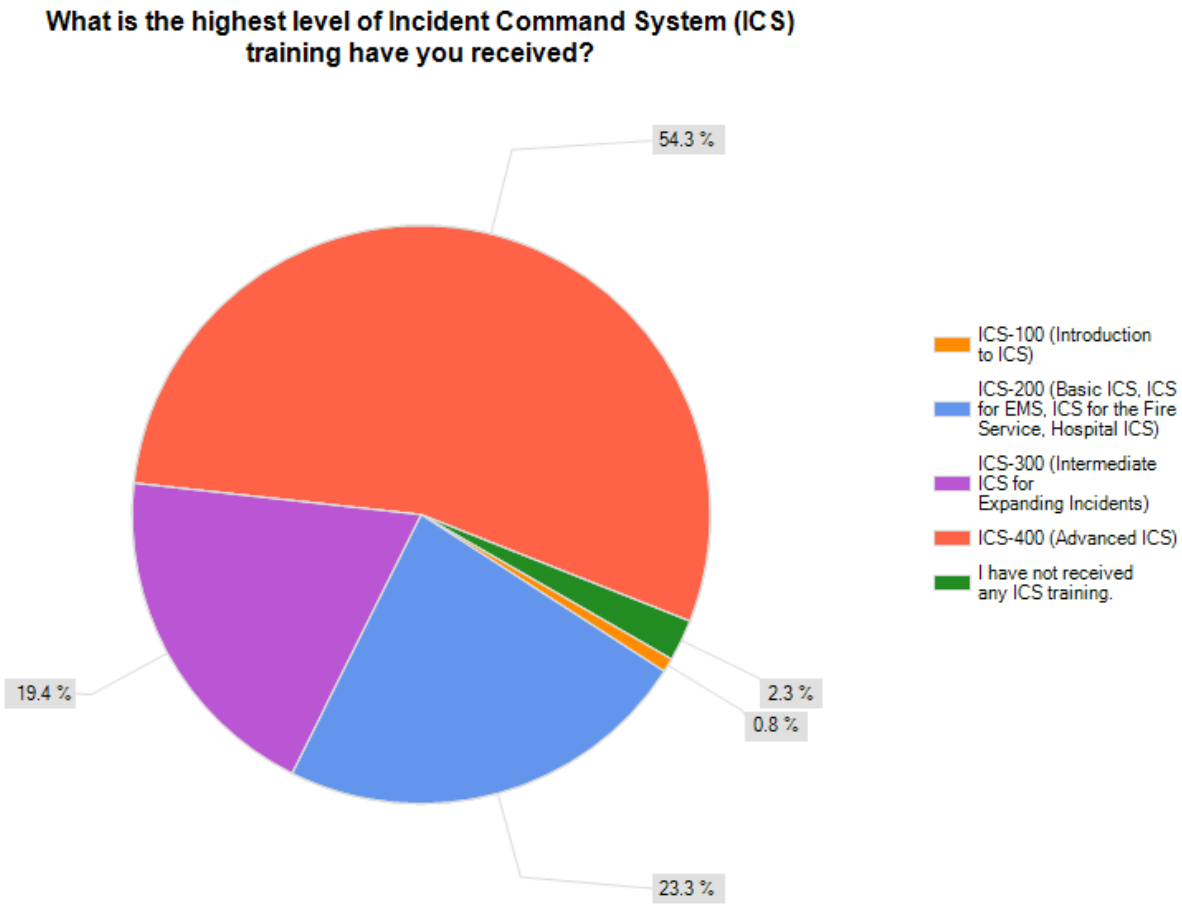


Figure 7. *Highest ICS Training Levels.*

The ICS experience of the participants was varied and focused mainly on the triage, treatment, and transport unit leader positions. They were closely followed by the position of incident commander and command staff positions, but noticeably the position of medical group supervisor was second to last as seen in Figure 8.

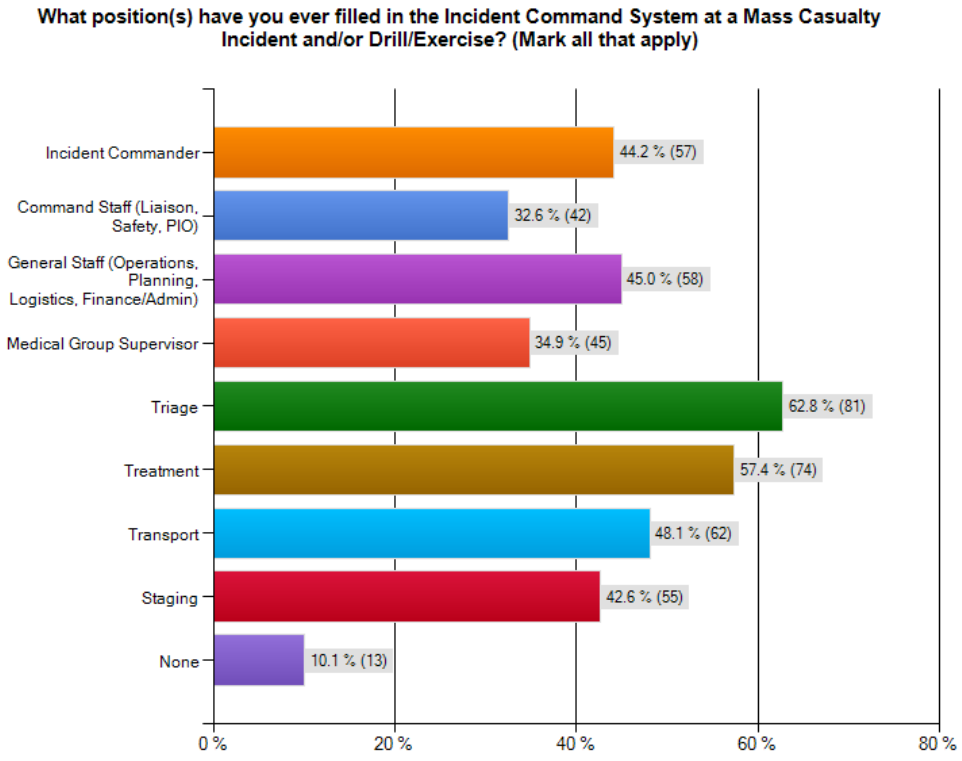


Figure 8. *ICS Experience.*

The sixth segment of the questionnaire dealt with mass casualty planning and all participants were asked if they felt their jurisdiction had the potential to experience a mass casualty incident and everyone answered in the affirmative (97.3%) with the exception of three people each stating either: no; they had not thought about it; or did not know. As it pertained to EMS providers feeling their EMS organization was prepared for a mass casualty incident 52.7% of participant said their organization was, but 39.5% said they felt they were not and 7.8% had not thought about it or did not know as shown in Figure 9.

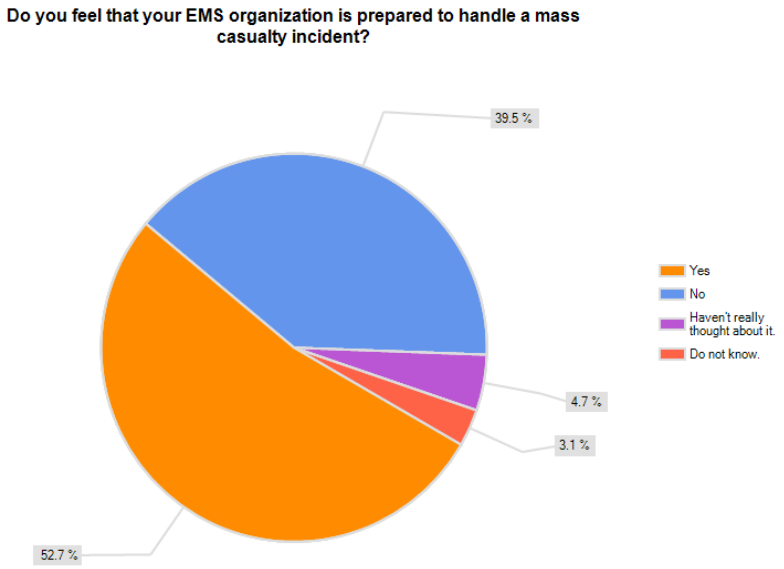


Figure 9. *Organizational Preparedness.*

When asked if the first arriving EMS provider was prepared to be handle a mass casualty incident an overwhelming 88.4% said they were and the remainder said they were not, had not thought about it, or did not know as shown in Figure 10.

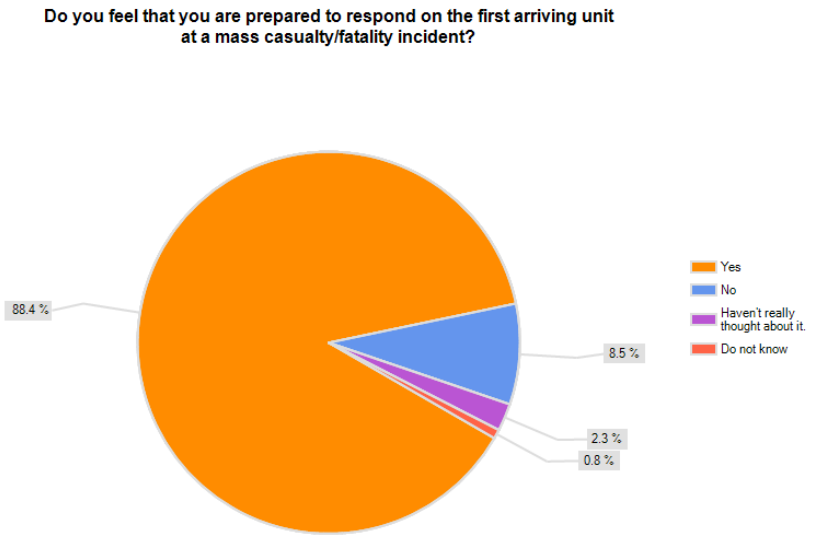


Figure 10. *Individual EMS Provider Preparedness.*

As stated previously the South Central Region of Pennsylvania does have a mass casualty/fatality plan and resources available. Several questions asked providers if they were aware of this plan and resources that were available at a regional level. As it pertains to participants being aware of the South Central Pennsylvania Regional Mass Casualty/Fatality Incident Response Plan 78.3% are aware of its existence, but only 40.3% have read it.

The South Central Task Force has a Type 4 Incident Management Team available for deployment to assist local responders with dynamic or multi-operational period incidents and 51.9% of questionnaire participants were aware of this capability. In addition, the South Central Task Force has EMS resources and capabilities for local use and 44.1% of participants had received information or training on these resources or capabilities. Another question presented to participants was the type multi-casualty triage system that was adopted by the South Central Region of Pennsylvania and 78.3% said it was SMART/START (Simple Triage and Rapid Treatment), which is correct, but the remainder were incorrect or did not know as shown in Figure 11.

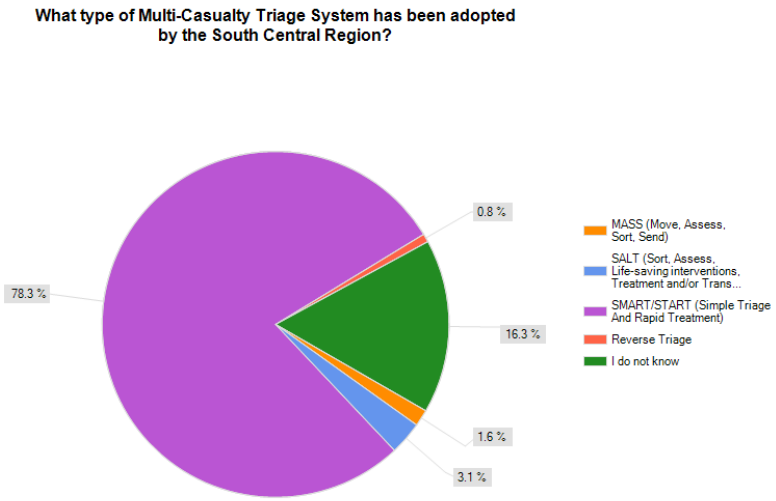


Figure 11. *Triage System adopted by South Central Region of Pennsylvania.*

The final segment of the questionnaire dealt with training methods and frequency of training. Participants rated demonstration at 73.6%, situational simulations at 72.1%, and classroom training with instructor at 52.7% as the most effective means of learning as shown in Figure 12. It should be noted that one-on-one and on-line training were rated the least desirable training delivery methods.

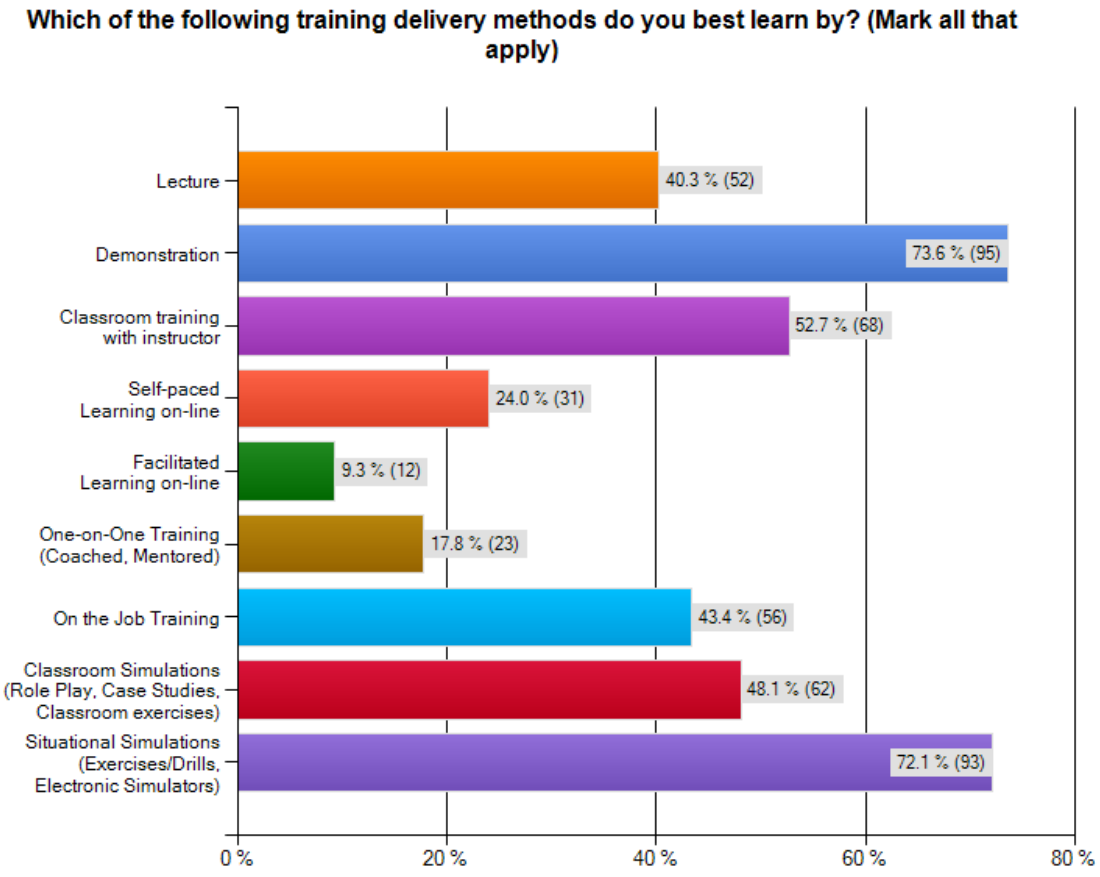


Figure 12. *Training Delivery Methods*

The frequency of training that was preferred by the participants was annually at 55.8%, followed by twice a year at 23.3% as shown in Figure 13.

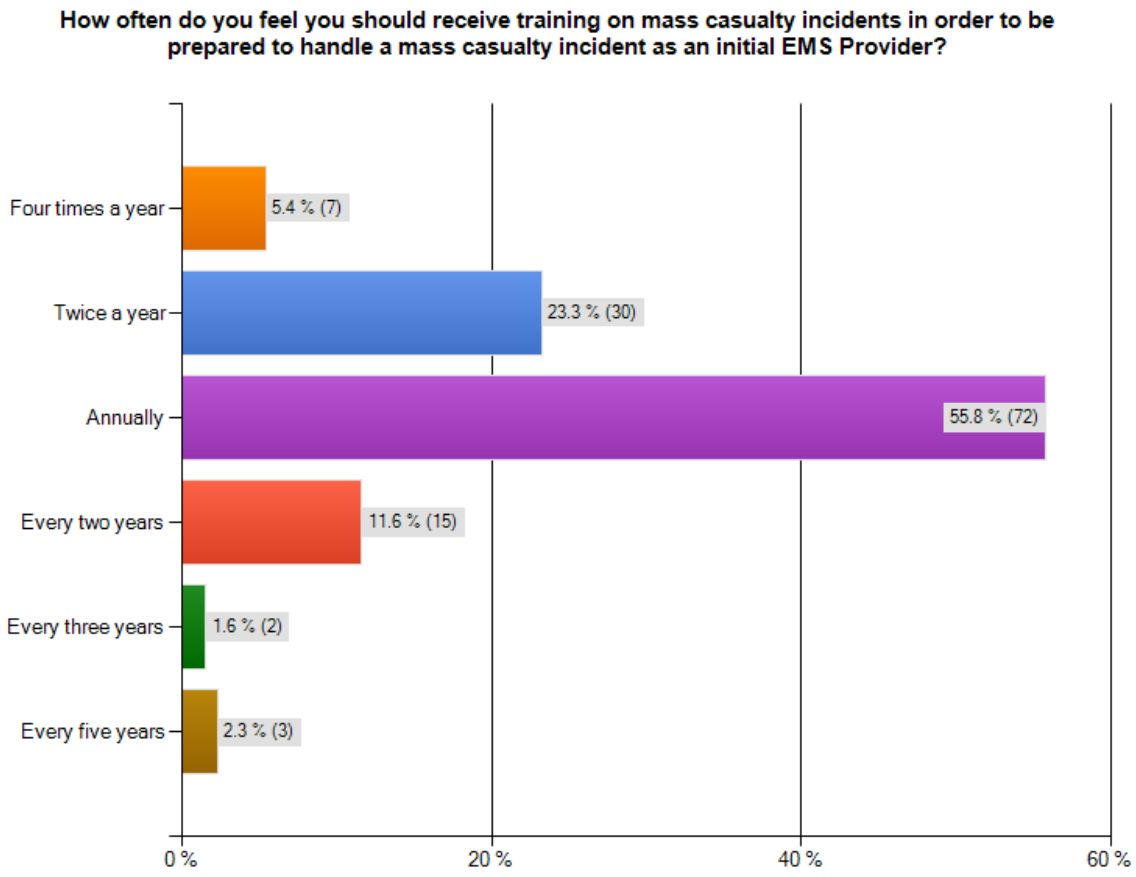


Figure 13. *Training Frequency.*

After having conducted an extensive literature review and obtaining data from EMS providers in response to a questionnaire, enough information has been compiled to answer the four research questions.

Research question one: What knowledge and skills are necessary for the initial EMS providers to establish a medical group at a mass casualty incident in the incident command system?

In conducting the literature review, it is clear that there is no single concept or management tool to answer this question. It is a combination of management concepts and processes that are needed to handle a mass casualty incident. It is definitely apparent that the use of the incident command system is the paramount resource management tool to be used at any

incident of magnitude in order to provide the structure necessary to address the strategic and tactical needs of an incident. The incident command system also provides an ability to grow with the size of the incident and can specifically provide a structure for EMS to work in during a mass casualty incident.

Incident command system training addresses many of the management needs of an all-hazards environment, but many training classes, with the exception of NIMS Incident Command Systems for Emergency Medical Services, will not provide the training necessary for EMS providers to establish a medical group at a mass casualty incident. This was demonstrated from the questionnaire pertaining to ICS experience and the position of medical group supervisor, which was rated second to last among the questionnaire participants pertaining ICS position experience. It is the position of medical group supervisor that has the primary focus of delivering managed care to the patient in the field and it is not being established.

The knowledge and skills needed by the initial EMS providers is, of course, a working knowledge of establishing ICS and the medical group, preferably with experience from a drill/exercise to reinforce knowledge and acquire skills in interpersonal dynamics and communications, which can be challenging to teach, but can be learned through practical exercises and experience. In addition, knowledge of all of the unit positions, area manager, and coordinator positions is helpful in understanding the needs and challenges that would be faced by those positions.

Research question two: What knowledge and skills are necessary for the remaining EMS providers to establish a medical group at a mass casualty incident in the incident command system?

The knowledge and skills necessary for all remaining EMS providers are the skills attained in certification to ones level of training (EMT, Paramedic, etc.). At the very least, an EMS provider can be placed in the treatment area providing care to patients, but because every EMS provider has the possibility of being the initial EMS provider at a mass casualty incident, it is imperative that all providers have the knowledge and skill to triage patients in an efficient and timely manner.

Information from the literature review found that other basic knowledge and skills needed by EMS providers are as follows: communications, as it pertained to notification of other agencies, hospitals, and organizations with mass casualty resources; mass casualty operations as in the process of providing an efficient and effective flow of patients from the field into the treatment area and transportation to the medical facility; patient tracking systems in order to keep track of patients from the scene to medical facilities; an awareness of available resources in the surrounding communities; an awareness of mass casualty potential in the community; hospital expectations or plans for mass casualty incidents; and mass fatality incident operations to aid in the proper handling of the deceased and subsequent investigation of their death.

Research question three: What training delivery method(s) would be best to provide ICS/Mass Casualty Training for the initial EMS provider?

A mass casualty incident is a dynamic and chaotic situation that will test the EMS provider's ability to provide for the varying and demanding needs of the incident. For this reason it is imperative that the EMS provider be trained using methods that will best assist him/her in recalling the information necessary to handle a mass casualty incident. Because all people are unique in there own way, they also have preferred means of learning. Some people prefer

listening to information being presented, while others are visually oriented and like to see the information, and many that like to experience learning by "doing" or hands-on training.

The result of the questionnaire on the preferred training method for EMS providers to learn by, reinforces the concept that people have differing means of preferred learning. Because EMS in general and a mass casualty incident will require actual physical activity, the learning method most utilized would be the situational simulation or exercise/drill in order to have the greatest impact on teaching the EMS provider. In addition to hands-on activities the EMS provider must attain a basic knowledge of mass casualty operations and management in order to make the appropriate decisions during a mass casualty incident and this is best taught using audible and visual delivery methods.

In order to address all learners' needs, the training program should be a combination of all three learning methods with the knowledge portion primarily being provided by audible and visual delivery methods and being reinforced with hands-on methods, which will also develop the necessary skills to be an effective medical group supervisor.

Research question four: How frequent should ICS/Mass Casualty Training for the initial EMS provider be delivered to EMS providers in order for them to remain knowledgeable and proficient?

Just as EMS providers will have preferred training methods in order to learn, they will also have differing needs as it pertains to retaining information. Many organizations require annual recurring training for topics that are required job duties and responsibilities, but do not occur frequently and in turn require periodic refresher training to remain proficient. Most of the EMS providers responded that annually is the preferred frequency for proficiency training, but there can be a case made that twice a year is justified dependent on the potential for a mass

casualty incident in a community and the skills of the EMS providers. The minimum requirement should be annually, but it is the EMS organizations responsibility to determine whether twice annually is preferred based on community and organizational needs. The results of this research have resulted in the development of a Mass Casualty Training Curriculum (Appendix B).

Discussion

The importance of this research was discovered during the triennial airport emergency airport plan exercise conducted at Harrisburg International Airport on September 18, 2010. The lack of a cohesive command structure at the group supervisor level resulted in an uncoordinated response to the medical needs of the incident. The importance of the use of the incident command system and mass casualty incident operations can not be understated. In the literature review this is reinforced by Mack (2011) when he states: “The fact is, managing a mass casualty incident, just like managing a hazmat or technical rescue incident, requires an understanding of the unique operations needed to successfully command the incident.”

The initial EMS provider is the key to success at a mass casualty incident because of time. It is of utmost importance that the initial EMS provider start developing the medical group structure at a mass casualty incident because as Mack (2011) makes not of: “Oftentimes, what the company officer does in the first 5 – 15 minutes of the mass casualty incident dictates whether operations will proceed efficiently or whether significant problems will surface later.” The initial EMS provider is a part of the team in that 5 -15 time period, which determines success or failure.

The totality of an incident’s successful outcome is based on the success of its parts, such as that of the branches, groups, and units that make up key components of the incident command system. Heightman (2001) wrote in *No Role is Insignificant* that “if the EMS crew trusts the

IC/MCI system, they know all components work together to ensure success." This is why an EMS provider must have a basic understanding of all components that make up a mass casualty response in order for this trust in success to be fulfilled.

Many EMS providers and first responders alike look at ICS as a system to only be used on incidents of multiple units and resources, but this can not be farther from the truth. In order that EMS providers are familiar and proficient with ICS, it is important to look at ICS being used on all incidents, including single patient/single unit medical emergencies. Owens (2012) states:

> "The everyday use of the ICS system and integration of its characteristics within daily operations provides for a great opportunity to become familiar with it for use in emergencies. It is also important to remember that ICS, while highly beneficial at large-scale incidents, is also beneficial at smaller, simpler incidents."

The use of ICS everyday will result in the EMS provider seamlessly using ICS in a large incident the same as would have been done during a smaller incident.

As many in EMS are aware, the number of personnel available on a normal day to respond and provide care to patients is at a minimal level to handle the daily routine incidents of a community. When a mass casualty incident occurs, those minimal resources are stretched even further and those personnel that normally would not provide care to patients are recruited to assist. Owens (2012) makes note of this by stating that "firefighters may be best suited for portering (movement of patients)" and this is not the only task other first responders may do. SMART/START triage is a basic concept that can be taught to any person with basic medical training. The training of personnel to assist EMS providers can be beneficial to not only EMS, but all involved in the mass casualty incident by providing timely triage and in turn efficient patient care.

The best way to prepare for the possibility of an incident is to plan for it. In many cases nothing goes as planned, but planning is a necessity in order to have a concept of the resources needed, processes used, and procedures to be followed. As stated previously, EMS provided on a routine basis is at the minimal levels necessary to accomplish daily EMS services in the community, but as the purpose statement of the South Central Pennsylvania Regional Mass Casualty/Mass Fatality Incident Response Plan states: "When … the magnitude of an incident(s) presents challenges outside the realm of traditional response actions, specialized procedures are required." (Emergency Health Services Federation & South Central Task Force, 2007).

It is important to plan for dynamic and infrequent incidents, but in order for plans to be implemented the key positions and participants in the plan must receive training on the plan. This training can be accomplished by using several methods, such as on-line training, lecture, demonstration, on-the-job, and simulations. As previously discussed, the training methods used should address the three learning preferences of auditory, visual, and hands-on. With the ease of use and low cost of computer based on-line training, it has become a popular means of training, but there needs to be caution when using this type of training on topics requiring interpersonal communication skills, and management systems. As Owens (2012) points out "One problem with computer based programs … is that they are taken by one person at a time. They do not allow for face-to-face interaction with other students to exchange ideas, thoughts, and information."

The key to reinforcing auditory and visual based training is to perform hands-on practical training in the form of exercises/drills (Owens, 2012). When conducting any exercise there must be an objective to the training exercise. Some would say the focus would be the treating of patients, but as Christen & Maniscalco (2002) stated: "The purpose of mass casualty exercises is

not to test medical treatment." "Concentrate on testing management skills, communications, patient flow, unit coordination, inter-agency coordination, mutual aid, planning, or logistics." Even the focus of the exercise should remain the testing of a couple of objectives in order to not overwhelm the evaluation process for the exercise/drill.

Also, an additional tool to learning is the Post-Incident Analysis, of which its value is noted by Christen & Maniscalco (2002) when they say: "The Post Incident Analysis provides a method for analyzing performance. The findings, especially the lessons learned, are the basis for training, new procedures, budget or personal needs, and inter-agency coordination."

Recommendations

In the case of an aircraft accident resulting in fire and a mass casualty incident at Harrisburg International Airport, it will be the responsibility of the Harrisburg International Airport Fire Department to knock down the main body of fire and provide a means of egress for the passengers to escape the aircraft and keep the fuselage from being compromised by fire. After the fire is contained or extinguished, the HIAFD is then to provide assistance to the initial EMS provider in helping establish a medical group. The survivors of the aircraft accident will be directly impacted by the actions of the initial EMS providers and the decisions they make in the early moments of the incident.

The EMS Providers of a mass casualty incident will have a profound and lasting impact on the survival and welfare of the patients they come in contact with. For this reason, the following recommendations are listed in order to improve the current knowledge and skills of EMS providers throughout the South Central Region of Pennsylvania:

- The development of a four hour basic initial EMS provider training for mass casualty incidents with an exercise component for all EMS providers.

- All EMS providers in the region are to receive annual proficiency training on initial EMS provider training for mass casualty incidents.
- EMS providers are to practice in different positions of ICS and the medical group in order to become more knowledgeable and skilled at various positions within ICS.
- All first responders with basic first aid or greater level of training should receive SMART/START triage training.
- Develop a train-the-trainer program for select counties in the region in order to train EMS instructors and EMS organization personnel to provide basic initial EMS provider training for mass casualty incidents.

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Appendix A

Questionnaire on EMS ICS and Mass Casualty Incidents.

Participant Information

1. *Are you affiliated with an EMS organization that provides EMS services to the South Central Region of Pennsylvania (Adams, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Franklin, Perry, and York Counties)?

    a. Yes
    b. No (If No, discontinue survey)

Participant Certification and Experience

2. *What is your certification level?

    a. First Responder
    b. EMT
    c. Paramedic
    d. PHRN
    e. Health Care Physician

3. *How many years have you been in the EMS field?

    a. Less than 5 years
    b. 5-10 years
    c. 10-15 years
    d. 15-20 years
    e. 20+ years

Mass Casualty Training

4. *How much mass casualty training (triage, incident management, EMS operations) did you receive in your certification level class (FR, EMT, Paramedic, etc.)?

    a. None
    b. Less than an hour
    c. 1-2 hours
    d. 2-4 hours
    e. 4-6 hours
    f. Greater than 6 hours

5. *Annually, how much additional mass casualty training have you received?

    a. None
    b. Less than an hour
    c. 1-2 hours
    d. 2-4 hours
    e. 4-6 hours
    f. Greater than 6 hours

6. What are the topics of the additional mass casualty training you have received? (Mark all that apply)

    a. Triage (SMART, START, SALT)
    b. Mass casualty management
    c. Mass casualty operations
    d. Mass fatality incidents
    e. Communications
    f. Patient tracking

7. *How often do you feel you should receive training on mass casualty incidents in order to be prepared to handle a mass casualty incident as an initial EMS Provider?

    a. Four times a year
    b. Twice a year
    c. Annually
    d. Every two years
    e. Every three years
    f. Every five years

8. If you have received Mass Casualty training within the South Central Pennsylvania region rate the overall courses:

    a. Excellent
    b. Good
    c. Fair
    d. Poor
    e. No Value
    f. Not Applicable

9. Please list any notable Mass Casualty training you have received:

Mass Casualty Experience

10. *Have you ever participated in a mass casualty drill/exercise?

    a. Yes
    b. No

11. If you were a first responder to a mass casualty drill/exercise, were you prepared from a knowledge and skill perspective to deal with the incident?

    a. Yes
    b. No
    c. Not Applicable

12. *Have you been a first responder to a Mass Casualty Incident? (A Mass Casualty Incident is when the number of patients exceeds the number of providers and/or resources on scene.)

    a. Yes
    b. No

13. *If you were a first responder to a mass casualty incident, were you prepared from a knowledge and skill perspective to deal with the incident?

    a. Yes
    b. No
    c. Not Applicable

14. What additional knowledge or skills do you wish you had prior to the drill or incident? (Mark all that apply)

    a. Triage
    b. Resources available
    c. ICS
    d. Communications
    e. Hospital MCI plans
    f. Hazards and MCI potential in my community
    g. MCI Management
    h. MCI Operations
    i. Patient Tracking
    j. Not Applicable

Incident Command Systems Training

15. *What is the highest level of Incident Command System (ICS) training you have received?

    a. ICS-100 (Introduction to ICS)
    b. ICS-200 (Basic ICS, ICS for EMS, ICS for the Fire Service, Hospital ICS)
    c. ICS-300 (Intermediate ICS for Expanding Incidents)
    d. ICS-400 (Advanced ICS)
    e. I have not received any ICS training.

16. If you have received ICS training within the South Central Pennsylvania region rate the overall courses:

    a. Excellent
    b. Good
    c. Fair
    d. Poor
    e. No Value
    f. Not Applicable

17. Please list any exceptional and/or notable ICS training you have received:

Incident Command System Experience

18. *What position(s) have you ever filled in the Incident Command System at a Mass Casualty Incident and/or Drill/Exercise? (Mark all that apply)

    a. Incident Commander
    b. Command Staff (Liaison, Safety, PIO)
    c. General Staff (Operations, Planning, Logistics, Finance/Admin)
    d. Medical Group Supervisor
    e. Triage
    f. Treatment
    g. Transport
    h. Staging
    i. None

Mass Casualty Planning

19. *Do you feel that your jurisdiction has the potential to have a mass casualty incident?

    a. Yes
    b. No
    c. Haven't really thought about it.
    d. Do not know.

20. *Do you feel that your EMS organization is prepared to handle a mass casualty incident?

    a. Yes
    b. No
    c. Haven't really thought about it.
    d. Do not know.

21. *Do you feel that you are prepared to respond on the first arriving unit at a mass casualty/fatality incident?

    a. Yes
    b. No
    c. Haven't really thought about it.
    d. Do not know

22. *Are you aware that South Central Pennsylvania has a Regional Mass Casualty/Mass Fatality Incident Response Plan?

    a. Yes
    b. No

23. Have you read or received training on the South Central Pennsylvania Regional Mass Casualty/Mass Fatality Incident Response Plan?

    a. Yes
    b. No

24. *Have you received information or training on the South Central Task Force's Incident Management Team capabilities?

    a. Yes
    b. No

25. Have you received information or training on the South Central Task Force's EMS capabilities?

    a. Yes
    b. No

26. *What type of Multi-Casualty Triage System has been adopted by the South Central Region?

    a. MASS (Move, Assess, Sort, Send)
    b. SALT (Sort, Assess, Life-saving interventions, Treatment and/or Transport)
    c. SMART/START (Simple Triage And Rapid Treatment)
    d. Reverse Triage
    e. I do not know

Training Delivery

27. *Which of the following training delivery methods do you best learn by?

    a. Lecture
    b. Demonstration
    c. Classroom training with instructor
    d. Self-paced Learning on-line
    e. Facilitated Learning on-line
    f. One-on-One Training (Coached, Mentored)
    g. On the Job Training
    h. Classroom Simulations (Role Play, Case Studies, Classroom exercises)
    i. Situational Simulations (Exercises/Drills, Electronic Simulators)

Final Comments or Suggestions

28. Please list any suggestions you may have to improve preparedness and training for a mass casualty incident:

* Question required an answer.

Appendix B

Mass Casualty Incident Training Curriculum

TOPIC:	**Taking Charge: Initial EMS Response and Establishing the Medical Group at a Mass Casualty Incident (MCI)**
TIME FRAME:	**4 hours**
LEVEL OF INSTRUCTION:	**Level 2 (Intermediate)**
PREREQUESITES:	**First Responder, EMT, or Paramedic certification, SMART/START training, and ICS-200**
BEHAVIORAL OBJECTIVES:	*** Student shall identify three potential situations that could occur in their community that could result in a MCI.** *** Student shall identify situations requiring the establishment of the medical branch or group.** *** Student shall attain a basic knowledge of the medical group and subordinate positions that comprise the medical group** *** Student shall attain a basic knowledge of the mass casualty operations (patient tracking and hospital MCI plans).** *** Student shall attain a basic knowledge of mass fatality operations** ***Student shall attain knowledge of establishing communications and notification of appropriate agencies and organizations during a MCI.** *** Student shall participate in an exercise performing the skills of the various positions in the medical group.**
MATERIALS NEEDED:	**Lecture: Taking Charge: Initial EMS Response and Establishing the Medical Group at a Mass Casualty Incident Power Point Presentation, LCD Projector, and Computer.** **Practical Evolution: Easel and easel pad.**

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Owens, K. (2012). *Incident Command for EMS.*

INTRODUCTION:

A mass casualty incident will be stressing and overwhelming if the EMS provider does not have the basic knowledge and skills to deal with the use of scarce resources effectively with an incident that requires more. This class is to provide training on how to handle a mass casualty incident from the perspective of the initial EMS Provider and the tools and processes that can be used to effectively manage resources, the incident, and communications in order to reduce suffering and the loss of life during a dynamic incident, such as an MCI.

PRESENTATION:

ORDER OF PRESENTATION	**MANNER OF PRESENTATION**
1.) MCI risk assessment	**Have students list three potential MCI events that could happen in their community.**
2.) ICS Command & General Staff Positions	**Very brief review** ***ICS equipment**
a.) Incident Command	**Transfer of Command**
b.) Unified Command	**Importance of EMS representative**
c.) Command Staff	
i.) Safety Officer	
ii.) PIO	
d.) General Staff	
i.) Operations	**Staging Area**
ii.) Logistics	
3.) Medical Branch or Group	**Discuss situations requiring a Medical Branch versus a Medical Group**
4.) Medical Group	**Supervisor duties and responsibilities** *** SCPA MCI/MFI Plan** *** Scene Size-up** *** Resource needs and requests**

a.) Triage Unit — **Leader duties and responsibilities**
*** SMART/START triage tags**

i.) Morgue Area — **Manager duties and responsibilities**
*** Location of morgue area**

b.) Treatment Unit — **Leader duties and responsibilities**
*** Location of treatment area**

i.) Immediate Area — **Manager duties and responsibilities**

ii.) Delayed Area — **Manager duties and responsibilities**

iii.) Minor Area — **Manager duties and responsibilities**

c.) Patient Transport Unit — **Leader duties and responsibilities**
*** Landing Zone coordination**

i.) Medical Communications Coordinator — **Coordinator duties and responsibilities**
***Hospital communications**
***FRED**

ii.) Ambulance Coordinator — **Coordinator duties and responsibilities**

5.) Communications — **Communications Model**

SCPA MCI/MFI Plan

Briefings

Operational Security

6.) Mass Casualty Operations	**Safety (PPE and procedures)** ***MCI risks and hazards**
	SCPA MCI/MFI Plan
	Patient Flow from scene to hospital
	Worksheets and checklists
	Vests
	MCI equipment
	Patient tracking ***PA-track** ***Paper tracking method** ***SMART triage tracking**
	Hospital MCI plans
7.) MCI resources	**SCPA MCI/MFI Plan**
	SCTF Incident Management Team
	SCTF EMS Assets
8.) Mass Fatality	**SCPA MCI/MFI Plan**
	Coroner
	Treatment of deceased
8.) MCI Termination	**Documentation**
	Critique/Post Incident Analysis

9.) Exercises

a.) Size-up and initial briefing

b.) Establishing the Medical Group