MASS CASUALTY INCIDENT RESPONSE PLAN
FOR THE
ODESSA FIRE DEPARTMENT

ADVANCED LEADERSHIP ISSUES
IN
EMERGENCY MEDICAL SERVICES

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ABSTRACT

The purpose of this research was to develop a plan for implementing an organized mass casualty incident (MCI) response for the Odessa Fire Department (OFD). The problem was that the OFD did not have a comprehensive plan to implement an organized mass casualty response. This research determined the need for an MCI plan, provided necessary elements of the plan, and revealed problems experienced by other EMS providers with actual MCI responses. High profile mass casualty incidents were studied such as the Columbine High School shootings, the Oklahoma City bombing, and the bombing of the World Trade Center. The opportunity to study the responses to some of the worst mass casualty incidents in the United States was very beneficial to the preparation of an MCI plan for the OFD.

The action method of research was used to determine the necessary components to be included in an MCI response plan. The answers to three research questions helped to develop a plan for responding to an MCI by the OFD. 1) What methods should be used to conduct a needs assessment for a comprehensive MCI response plan for the Odessa Fire Department? 2) What should be considered in the criteria selection process to determine what are appropriate elements for developing a MCI response plan for the OFD? 3) What is the plan for the Odessa Fire Department for an MCI response?

The OFD conducted an internal survey to determine if the firefighters believed an MCI plan was needed. This researcher was particularly interested in what elements of an MCI response the OFD firefighters thought were needed, and what components were the weakest of four categories; 1) training 2) equipment and supplies 3) communications 4) all of the elements.

An external survey of fire departments and EMS providers located within close proximity of the OFD was conducted to determine if other mass casualty plans existed. If plans

exist, if experienced an actual MCI in past five years, is incident command utilized, and how often is the organization's plan exercised? The external survey was also sent to cities of similar size and make up of the City of Odessa. The results of the OFD internal and external fire department surveys supported development of a MCI response plan, and the literature review supplied the framework for which to build and implement a MCI response plan for the OFD.

The results of the literature review gave a framework for which to build a comprehensive plan with proven recommendations from experienced responders of what to include and of what to avoid in a MCI response plan. The recommendations of the organizations that had experienced a large scale EMS incident and this researcher is to be aggressive with preparing a MCI response plan, acquire the necessary equipment/supplies, provide training, and practice the plan often with all mutual-aid resources.

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INTRODUCTION

The problem was that the Odessa Fire Department (OFD) did not have a comprehensive plan to implement an organized mass casualty incident (MCI) response. The purpose of this research was to develop a plan for implementing an organized MCI response. To develop a plan, three research questions were considered:

1) What methods should be used to conduct a needs assessment for a comprehensive MCI plan for the OFD?
2) What factors should be considered in the criteria selection process to determine what are appropriate elements for developing a MCI response plan for the OFD?
3) What is the plan for the OFD for an MCI response?

The action research method was used to answer these questions, and ultimately resulted in a plan for implementing an MCI response plan.

The OFD has a coverage area of 904 square miles, covering the City of Odessa and Ector County. The population of the coverage area is approximately 125,000 people. Odessa is located on Interstate 20, halfway between Dallas and El Paso, Texas. The opportunity to experience a natural MCI from tornados or a man-made MCI through mass transportation, oil refineries, manufacturing, or hazardous chemical incidents remain high.

The interest in being better prepared to respond to a large EMS incident came from the participation of the Advance Leadership in Emergency Medical Services class this researcher attended at the National Fire Academy. The opportunity to research the required elements needed for a comprehensive MCI plan for the OFD came from the research opportunity provided by the Executive Fire Officer Program.

BACKGROUND AND SIGNIFICANCE

The Odessa Fire Department was established in 1923. What began as a small seven member, volunteer department, quickly grew to our current status of 150 paid, shift personnel, with eight stations. The OFD began providing emergency medical service (EMS) in 1973. Haz-mat and technical rescue teams, fire inspections, and public education/prevention programs are also provided.

Seventy-six percent of the OFD responses are EMS incidents. In 2000, the OFD responded to 9,594 total incidents. The responses consisted of 7,290 EMS, 626 fire, and 1,678 miscellaneous runs. In the past twenty-eight years of providing EMS, the OFD has been fortunate to be able to manage the incidents with limited resources, training, and no organized, comprehensive, MCI response plan. To simply hope that large EMS incidents will not occur within an EMS provider's jurisdiction is a dangerous method of operation. Explosions, tornadoes, earthquakes, hurricanes, vehicle accidents, building collapse, are a few disasters that have caught many communities off guard. Planning and preparing for the incident is the most sensible approach, believing these things can happen any place and at any time. The City of Odessa is located in the middle of the oil industry with several manufacturing plants and chemical companies. Tornadoes are a frequent concern, with several near misses in the past. With four major highways, a railroad, a county and an international airport, 36 public schools, a sports complex, and a coliseum, increases the probability the City of Odessa will experience a mass casualty incident as a few of the neighboring communities have.

Community leaders and the general public expect the EMS provider to be an effective manager and hold the organization accountable to meet the needs of the community. This will be even more evident during and after a large MCI. This research was to clarify the need for the

OFD to develop and implement a plan to better fulfill the department's responsibilities to responding and managing a large scale EMS incident to the expectations of the community.

The Advanced Leadership of Emergency Medical Services (ALEMS) class attended by this researcher at the National Fire Academy (NFA) was instrumental in provoking the thoughts for this research. The course focused on leadership, quality management, and customer service. These topics of discussion provided an opportunity to examine the services provided by the OFD and identify weaknesses within the organization. (NFA) Instructor, Don Lee, Captain for the Los Angeles, (CA.) City Fire Department (LACFD), added much to the class through discussions of the LACFD response to the California earthquakes. An incident of that magnitude would overwhelm most departments, but especially those that have no MCI plan in place.

Another contributing factor to this research was the school shootings at Columbine High School. This occurred while attending the ALEMS course and the class was given the opportunity to watch the incident as it unfolded. Suggestions on how to best manage the incident was plentiful and informative. This researcher once again thought of the ability of the OFD to respond to such an incident and realized this could happen in Odessa, Texas as well. The necessary ALEMS research paper afforded the opportunity to address the problem of the Odessa Fire Department not having a comprehensive plan for implementing a mass casualty response.

From past experience, the City of Odessa, Texas has not experienced a mass casualty incident except for providing a supporting role by responding to assist neighboring communities devastated by destructive, death and injury producing tornadoes. The present impact of this study has resulted in a better readiness to respond through developing and implementing an MCI plan, purchasing the necessary equipment and supplies, providing MCI training to all personnel, and practice through conducting several mock disaster scenarios. The future impact will be to

maintain a well-planned, more organized response and management of a large-scale incident. Evaluation and exercising the plan will continue.

LITERATURE REVIEW

In a three year case study of 22 mass casualty incidents, Alexander M. Butman (1982) in association with the Ohio State University, determined that in order to plan an effective response to an MCI, the following must be considered;

~ What is likely to occur?

~ When?

~ Where?

~ Of what magnitude?

~ Of what medical nature?

Butman concluded that weather, time of day or night, or population density had little or no correlation to an MCI. Of the 22 cases studied, 12 related to transportation, 9 of which involved transportation of people. Nine incidents were related to buildings where large groups of people gathered, and three were related to hazardous materials. An observation of the study includes;

1) An MCI can occur at anytime of the day or night, at any season, in any part of the county, and in communities both large and small.
2) If an area transports children to school in buses; if there is a highway or railroad tracks running through a town; if there are commuters to or from a town; if a town is on the banks of a river; if it is located under or near a flight path (and there is practically no place in America that isn't) – then there is a chance of a major transportation – related disaster.

3) If a town has buildings where large groups of people gather – hotels, schools, churches, shopping centers, apartment buildings, auditoriums, etc. – then there is a chance of a building related MCI.
4) If any business in an area make, use, or store hazardous materials (grain elevators, factories, warehouses, etc.) or if hazardous materials are ever transported near or through a town, then there is a chance of a hazardous – material – related disaster.
5) If an MCI does occur, there is the highest probability of having from 40 to 80 seriously injured people to treat. To preplan for any lesser number is to invite failure, We feel that these observations apply equally to small farming communities and major metropolises. It is foolish to suppose, for any reason, that a mass casualty incident "can't happen here." It can! The only questions are, "When will it happen?" and "Will you be prepared?" Every community should have a response plan and properly trained personnel ready to go into action when an MCI becomes a reality. (Butman, 1982, p. 16)

Butman, through research discovered similar problems with many MCI responses and believes one can devise a general plan including a training program that will address them effectively.

1) Failure in adequate alerting
2) Lack of rapid "primary" stabilization of patients
3) Failures to rapidly, move, collect, and organize patients at a suitable place.
4) Failure to provide proper (or any) triage
5) Use of overly time consuming and inappropriate care methods
6) Premature commencement of transportation

7) Improper use of personnel in the field

8) Lack of proper distribution of patients, resulting in improper use of medical facilities

9) Lack of recognizable EMS command in the field

10) Lack of proper preplanning and lack of adequate training of all personnel

11) Failure to compensate for malfunctions and premeditate problems

12) Lack of adequate or proper communications (Butman, 1982, p.33)

Some may believe that mass casualty incidents are so diverse and bizarre that they are unpredictable. Butman and the Ohio State University study clearly indicate that when generalizations are based upon daily EMS, this supposition is correct. However, study of field experience with MCI's reveals the following:

1) The events are predictable.

2) The chain of events is predictable.

3) The problems are predictable.

4) The failures are predictable.

This is true because regardless of the initiating mechanisms, human behavior and basic EMS needs are predictable. According to Butman, it would be an injustice to not mention that there are instances when the handling of a mass casualty incident by a group of exceptionally skilled responders, there are instances when their actions saved countless lives. Where the application of resources, the intervention, the organization, and the field command initiative were of such a high caliber that the response can best be described as a virtuoso performance. The study identified 2 factors common to exceptional response. 1) Leadership – in each of the exemplary responses, either an individual or a group of individuals had shown impressive

leadership qualities. These individuals displayed initiative, understanding, and personal leadership skills. 2) Urban Response System – Urban or highly populated suburban areas with a rapid availability of EMS resources, the structure, response, and command used daily were enough to be effective in an MCI.

Butman's research examined all aspects of an MCI response and should prove very useful in planning and organizing an MCI response plan. The study was beneficial by emphasizing the need to be prepared for such an incident, listing a community's risk factors, and the recommendation of preparing to manage 40 to 80 seriously injured people from a MCI. Elements of failure and success were included in Butman's research and were utilized in the MCI plan for the OFD.

A.J. Heightman (2000) made the observation that an MCI occurs at night, in inclement weather, or when the most talented MCI mangers are out of town. Heightman developed 20 tips for MCI management.

1) Put an MCI response plan in place. Develop plans that dispatch a pre-determined number (wave) of transport units. Example: Create a three-level MCI response plan. Level 1 response would send seven ambulances to the scene; Level 2 would send 14 ambulances; and a Level 3 would send 21 ambulances. In this way, incident command and the dispatch center will know that the levels accelerate in series.

2) Pre-package MCI supplies – Prepare MCI kits in advance and carry these kits in several vehicles. Make sure all items are easy to access.

3) Establish dedicated communications: Utilize separate mobile or portable radios to hear what is happening on the other frequencies.

4) Avoid high noise areas and distractions. Position command, treatment, and transport sectors in areas where scene activity and noise will not interfere with patient care, communications, or scene coordination.

5) Utilize color – coded vest. Every EMS vehicle should carry a complete set of EMS/MCI incident management vests. Use color-coded vests, a different color for each sector, so the sector officers stand out in a crowd.

6) Know what you need. Early in an incident, the incident commander should consider all the resources needed to manage the situation.

7) Expect the arrival of more units than requested. When the big one happens, ambulances seem to come out of the woodwork. Immediately after declaring an MCI, command should designate a staging area and a staging officer, and all responding units directed to that location.

8) Ensure your personnel understand MCI responsibilities. Make sure each person in your organization has a basic understanding of each operational sector's responsibilities.

9) Include the communications center in the MCI loop. Many centers are not empowered to dispatch MCI resources prior to an EMS unit arriving on scene. Prepare a list of responsibilities the dispatcher can assume when an MCI occurs. These should include:

- ~ Dispatching additional EMS units.
- ~ Ascertaining a command post location.
- ~ Ascertaining the staging area for incoming units.

~ Assigning separate radio channels for EMS operations, incoming units, and hospital notifications.

~ Prompting of EMS command to be determined if extra units, supplies, helicopter, coroner/medical examiners, buses or evacuation centers are needed.

10) Anticipate incident escalation. What begins as 10 reported patients often changes to 20 patients soon after crews arrive.

11) Triage is no big deal. Though triage tags are important, the patients will be seen at least 4 times by medical personnel before transport.

12) Use multiple triage assistants. If responsible for triage and confronted with more than 10 patients, have one or more assistants helping perform triage. Give 25 tags to each assistant and require the tags to be returned to command after triage is complete. If an assistant returns 10 tags, then 15 patients were tagged.

13) Tag everyone. Though a person may believe tracking patients mentally is appropriate, arriving ambulance personnel are not mind readers.

14) Notify hospitals early. Alert hospitals as early as possible to allow early preparations by the receiving facility.

15) Arrange for special resources. Develop pre-arranged agreements.

16) Use the transportation officer efficiently. The transportation officer should focus on establishing a transport zone for incoming ambulances.

17) Use cones/markers to define MCI sectors. Use colored cones or markers to delineate where crews may walk or work, as well as show prohibited

areas. Position cones in a diminishing pattern much like a funnel or chute. This will visually direct personnel to bring patients down the chute to the treatment area.

18) Colored tarps work magic. The most efficient items for identifying priority treatment areas are color-coded salvage covers or tarps.

19) Designate a transportation team. Effective patient transport requires at least four people.

20) Computerize critiques. Use a database to log comments from personnel actively involved in the MCI incident. This will be valuable with conducting an effective critique.

The tips provided by Heightman seemed to be reasonable in theory, but this researcher disagrees with establishing a predetermined number of ambulances for certain levels of an MCI response, The first arriving unit should make that determination and make an informed decision on how many units are needed. Heightman's suggestion of allowing dispatch to make decisions such as the location of the command post and staging area did not seem logical and was not used in the MCI plan for the OFD.

Another article by Heightman, (1999) examines the problems experienced at the worst school shooting in U.S. history, Columbine High School in Jefferson, Colorado. Twelve students and one teacher died, one hundred and sixty patients had to be triaged; twenty-four students had been shot or wounded by explosions and needed immediate care. The Columbine incident was a dangerous and frustrating call for the one hundred and sixty-six EMS and Fire personnel that responded.

Eric Harris and Dylan Klebold detonated more than three homemade explosive devices

and fired more than one thousand rounds of ammunition at the students, teachers, and friends. Heightman outlined the lessons learned from the Columbine incident, which could prove beneficial in planning and preparing an organization for a large scale EMS incident.

~ Be prepared for uncooperative parents and bystanders

~ A unified command must be established

~ Early information will be unclear and conflicting

~ Staging officer and staging area should be established early

~ Triage and EMS staging areas should be located away from high activity areas.

~ A liaison from the command post needs to brief personnel in the staging areas.

~ Scene managers must prepare to receive and deploy apparatus, personnel and resources not specifically requested.

~ Ambulance personnel unfamiliar with incident management systems will present logistical and operational complications on scene.

~ Position police officers in triage and treatment areas at violent scenes.

~ Individuals evacuated can provide valuable information prior to being removed to a collection point.

~ Tow trucks should be on the resource list to remove unoccupied vehicles.

~ All personnel in key positions must use incident command vests.

~ At incidents involving weapons, EMS and fire personnel directed to enter areas near the scene must understand it is impossible for law enforcement

officials to guarantee the areas are safe (clear) before they have all suspects in custody.

~ Maps of the structures and roadways must be precise and updated and be readily available.

~ Triage managers must determine and prepare to staff natural triage funnel areas where patients may begin to accumulate.

~ Rescuers may need to cut openings in fences surrounding a school to facilitate the evacuation of student and faculty.

~ Incident commanders should obtain the exact latitude and longitude of the scene and contact the Federal Aviation Administration (FAA) early to restrict news helicopters from interfering with aero-medical operations and creating unnecessary noise.

~ All mutual-aid units should have compatible radio frequencies.

~ Cellular/telephone systems will be overloaded.

~ Scene managers must request spare radio batteries, rehab supplies, vehicle refueling, auxiliary lighting and utility company resources early in an incident.

~ EMS and fire personnel should be trained for coordinated response with law enforcement tactical teams.

~ Rescuers must be alert for the explosive devices on victims.

~ A large incident will result in months of follow-up reports, investigations and interviews and place significant demands on the administrative staff. (Heightman, 1999, September, p. 46)

Lessons outlined from the Columbine incident by Heightman were very informative and utilized in the OFD mass casualty response plan. This researcher has concern of sending fire and EMS personnel into an area not deemed secure by law enforcement. Though this may be necessary occasionally, it should be avoided if possible.

A publication from the Federal Emergency Management Agency (FEMA), the United States Fire Administration and the National Fire Academy (1995), explains the need to be prepared to manage a mass casualty incident through the incident command system.

> A proven system, the Incident Command System (ICS), is designed to provide the emergency responder with an organization and system to manage these events effectively.
>
> There are many benefits to be gained from the use of the ICS. It enables the user to organize, control, and direct responders quickly. It eliminates the possibility of freelancing. It allows the Incident Commander (IC) to direct all responders toward a common goal. This organization, control, and direction minimize confusion and chaos. (FEMA, 1995, p. SM 1-3)

FEMA states the advantage of the ICS is; it provides common terminology and position titles, creates a chain of command that ensures the proper flow of critical communications to the appropriate command team members, groups common functions and responsibilities within the organization, and provides for responder accountability. The system will only be effective if all responders are trained and maintain a good working knowledge of ICS.

The publication includes a command tool box which provides many tactical worksheets that have proven very useful to this researcher in managing and documenting a large scale EMS incident drill. These documents are easily copied and should be placed in separate notebooks and

issued to the appropriate sector officers, and should be readily available for the incident commander. Also included is an outline of the Simple Triage and Rapid Treatment (START) initial triage system used by many EMS providers.

The FEMA publication addresses many areas of concern in planning, organizing, responding, and commanding a major EMS incident, and should be considered when an organization develops an MCI plan. The tactical worksheets have proven effective to the OFD during simulated mass casualty incidents. The suggestion of all responders to be trained with the incident command system proved to be a necessary element with the simulated MCI exercises.

Pedrotti (2000) reported that research by the Phoenix, (AZ.) Fire Department in association with 15 other EMS providers and fire departments, though primarily focusing on a commercial triage tag, produced some interesting data. The study involved more than 150 volunteers and 300 central Arizona fire, rescue, and EMS personnel. Eight simulated mass casualty incidents were conducted to evaluate the effectiveness of three type of triage tags, three methods of attaching the tags to patients, and three types of triage kits.

> In conjunction with the statewide triage study, the EMS office of the Phoenix, (AZ.) Fire Department reviewed all first alarm (or greater) medical incidents. More than 87% of these incidents involved multi-vehicle crashes, with an average of 6.2 patients per event. EMS personnel triaged more than 50% of the patients as priority 1 most often due to mechanism of injury – transported them to Level 1 trauma centers. Almost one in four incident involved seven or more patients. Pedrotti (2000, p. 79-80)

According to the Phoenix, Arizona study, many small EMS providers would be overwhelmed 25% of the time with managing 7 or more patients from one incident.

Indicating that an organization should evaluate their systems capabilities and plan to facilitate a proper response to a major EMS incident. The external survey conducted by this researcher revealed similar numbers of EMS providers that would be overwhelmed with managing 7 or more critical patients from one incident.

Jerry l. Mothershead (2001) confirms that disasters are not uncommon, and that 69% of persons living in the southeastern U.S. have reported exposure to some traumatic event.

> There is evidence that disasters may be increasing, as are their cost:
>
> The American Red Cross recently reported that it responded to more U.S. disasters in the year 2000 than at any time in American History – 55 shelters were opened in 27 states in response to disasters in December 2000 alone. (Mothershead, 2001, p. 1)

In classifying disasters, disasters are often classified by the resultant anticipated necessary response and usually result in an MCI.

1) A level l disaster is one in which local emergency personnel and organizations are able to contain and deal effectively with the disaster and it's aftermath.
2) A level ll disaster requires regional efforts and mutual aid from surrounding communities.
3) A level lll disaster is of such magnitude that local and regional assets are overwhelmed, requiring statewide or federal assistance. (Mothershead, 2001, p. 3)

Matthew R. Streger (1998) writes that between 75% - 85% of fatalities occur within the first 20 minutes of the event, usually before EMS contact is made. Many of these patients will not survive and will probably be in cardiac arrest prior to the EMS arrival.

According to Streger, the bombing of the World Trade Center and the Oklahoma City Federal Building are the two highest impact incidents in recent domestic history. At the Trade Center, there were 1000 patients, including six fatalities, generated from this incident. In Oklahoma City, 410 injuries were directly attributed to the blast. Of the 139 patients transported by ambulance, 32% were categorized as red or immediate, 18% were categorized as yellow or delayed, and 50% were categorized as green or ambulatory. There were 167 fatalities also attributed to the blast.

Streger's study includes information for triage, casualty rates/injury reports, first unit responsibilities, triage systems, triage equipment, and triage applications, but of special interest to this researcher was the key points Streger listed;

~ Use a recognized triage system that is easy to learn, that does not require advanced diagnostic skills and allows for basic patient intervention.

~ Use the Incident Management System on every call, large or small, and wear personnel identification vests.

~ Get accurate preliminary and final patient counts, and relay these numbers to the Incident Commander.

~ Use some type of visual color-coded identification system to indicate patient priority.

~ Do not get stuck providing one to one patient care.

~ Re-triage patients frequently, both at the incident and on arrival to the treatment areas.

~ Pre-plan potential incidents that may be encountered.

~ Be aware of emergency responders as potential targets.

~ Practice, Practice, Practice! (Streger, 1998, p. 6-7)

This researcher agreed with Streger's key points and particularly the recommendations of pre-planning potential incidents and the emphases placed on practicing the plan.

A factor often over looked and must be considered in an MCI is the fatalities. John Linstrom, (2000) recognizes that today's fire and EMS providers are well versed in the MCI triage techniques, but may not be so proficient when the dead bodies out number the injured.

> Although mass-fatality incidents resemble MCI's on the surface, there are several differences. The most important distinction of a mass-fatality event is its goals once the rescue and medical operations have been concluded:
>
> ~ Recovering the deceased with dignity and respect, and
>
> ~ Caring for the living, both responders and survivors. (Linstrom, 2000, p. 45)

Linstrom also points out the legal status of the deceased. The dead should not be moved without the coroner or medical examiner's consent. Major concerns of mass-fatality incidents include the investigation of the cause of death, as well as if the death constitutes a homicide. A team approach between law enforcement, EMS, and fire personnel are necessary in assisting the families, witnesses, and live victims. Managing mass-fatalities should be included in a large scale EMS incident plan.

Another article by Matthhew R. Streger (1999) identifies communications as the most important aspect of an emergency response system.

> The best-trained paramedics, driving the newest ambulances with the most sophisticated equipment, are ineffective during an incident if they cannot adequately communicate with each other, their dispatch center and other responding agencies. Despite the critical nature of this element, significant communication failures continue to occur in systems everywhere during high impact events. (Streger, 1999, p. 1-7)

Streger recommended the following key points:

~ Pre-plan – find a way for police, fire, and EMS to communicate on scene.

~ Use alternative channels for incident communications, preferably repeated channels.

~ Practice radio discipline. Think before you speak and key the radio for one second before speaking. Use plain English rather than radio codes.

~ Buy the right radios. Have all the channels needed in your portable radios, and purchase extra batteries.

~ Dispatchers should remain calm and keep control over system operations.

~ Always remember that everyone is listening to your radio traffic, including the news media.

In reviewing the material provided through this research, a comprehensive plan for the Odessa Fire Department was developed and problems identified by others should be avoided. The research revealed that most problems encountered during an MCI are due to a lack of planning, coordination, training, communication, and practice. The OFD developed a plan,

trained, and participated in three simulated mass casualty incidents. Each simulated incident revealed problems with the plan. The problems were evaluated, changes were made, training continued, and further review is planned.

Edward M. Brazle (2001) wrote of the success the Virginia Beach, (VA.) Department of EMS experienced on a recent MCI involving a school bus containing 40 middle-school passengers. Brazle attributed the success for this incident to;

- ~ Pre-planning and practice
- ~ Early establishments of sectors
- ~ Key leadership roles were established regardless of organization affiliations
- ~ Key officers wore clearly identifiable vest
- ~ Sector officers had tactical work sheets
- ~ All required tools and equipment were readily available to on scene personnel
- ~ Most importantly, everyone knew exactly what to do from the moment they were dispatched.

Brazel explained the struggle of preparing the Virginia Beach MCI response capability to the level currently enjoyed. Involvement in an MCI workshop sparked the interest and provided the knowledge to begin planning a more organized response to mass casualty incidents.

> Many old time fire and EMS officers felt that if you throw enough engines and ambulances at a call, it would resolve itself. However, the spark provided by the MCI workshop ignited a flame of interest in improving our local MCI response system. (Brazel, 2001, p.68)

Brazle's experience with the organization's reluctance to plan, develop, and implement a well organized response to a major EMS incident establishes the importance of gaining the support of the department to make the efforts more effective. Brazle offers the following advice:

> ~ Use a simple approach to get organized
>
> ~ Assess your current capability.
>
> ~ Apply this Capability to an MCI scenario
>
> ~ Immediately maximize what you already have.
>
> ~ Build a plan for the future. Involve field and staff personnel
>
> Through out the entire process, integrate the equipment and procedures into your regular training and daily operations. Encourage triage exercises as part of daily drills. Build everyone up to a large-scale exercise. Unless your personnel see the principles in action, they'll forget the IC system. When the critics say, "It will never happen here," point out the next bus that passes your headquarters and ask, "Do we have what it takes to manage a crash five minutes from now?" (Brazle, 2001, p. 71)

The recommendations of Brazle to keep the MCI response plan simple and to build on current capabilities seemed to be a logical approach, and was the method used by the OFD in preparing the department's MCI plan.

PROCEDURES

The desired outcome of this research was to develop a plan for implementing a MCI response plan for the OFD. The members of the department were surveyed to obtain an internal perspective and gain support of such a program. Without the support and input of the members,

including administration, the plan would not be effective. A sample of this survey can be found in Appendix A, the results in Appendix B.

A literature review was conducted to obtain information from departments that have a MCI plan in place and have actual experience in managing a MCI. The literature was studied in an effort to avoid common mistakes experienced by past responses. Particular interest was given to potential obstacles that could hinder the department's efforts. The documentation by other researchers on the need of an organized MCI plan proved useful when making funding request for such a program.

An external survey was used to determine if other departments have a MCI plan, if incident command is part of the plan, how often they practice the plan, and what elements of the plan needed improvement. This survey is included as Appendix C and the results in Appendix D. The external survey was sent to EMS providers within close proximity of Odessa, TX. and departments of similar size and make-up of the OFD. The information gathered from surrounding EMS providers were of most interest, since these agencies would be utilized as mutual-aid resources by the OFD. The information and suggestions from various researchers from the literature review, provided the framework for which the MCI response plan was developed for the OFD.

POPULATION

The internal survey was distributed to 30 members of the department with a return of 80%. The internal study provided valuable information from the OFD members with a vast knowledge of the current capabilities and needs of the department. The interest displayed in enhancing the MCI response capabilities of the department proved the program had the necessary support to be an effective effort.

The population of the external cities surveyed ranged from 1,000 to 117,000, with an average population of 21,906. Most providers have a plan in place, utilize incident command, practice at least once per year, and experience the problems of training, equipment/supplies, communications, and practice opportunities. Five of the surveyed cities are within 30 miles, six within 60 miles, seven within 100 miles, and three were over 100 miles from the City of Odessa. The three cities over 100 miles were chosen due to being similar in size and make up of the OFD. The remaining 19 cities were surveyed because of mutual aid advantages to the OFD.

LIMITATIONS

Limitations of preparing a comprehensive MCI plan were the lack of actual experience with a real MCI with the cities surveyed, and most of the information provided from the external survey was from EMS providers of small communities in close proximity of the Odessa area. These cities were surveyed due to the organization's role for mutual aid for the OFD. Larger cities surveyed had different mutual aid resources than available to the OFD. However, the weaknesses identified from the surveys provided excellent information for training needs of the surrounding mutual aid resources of the OFD.

RESULTS

Research Question # 1

What methods should be used to conduct a needs assessment for developing a comprehensive MCI plan for the Odessa Fire Department?

Answer: The Odessa Fire Department conducted an internal survey to determine the need of the department, the elements the members considered to be weak, and if the OFD members supported establishing a more comprehensive MCI plan. An overwhelming 94.5% of the

members supported developing a comprehensive MCI plan. An external survey was conducted to determine if other departments had a MCI plan, utilized the incident command system, had actual MCI experience, how often they practiced the plan, and what weaknesses were discovered. While 99.9% of the returned surveys indicated plans were in place and 96% indicated a MCI practice occurred at least once per year, only 38.5% reported actual experience with an actual MCI response in the past five years.

Research Question #2

What factors should be considered in the criteria selection process to determine what are appropriate elements for developing a plan for a mass casualty response plan for the Odessa Fire Department?

Answer: The factors considered in the criteria selection process were the size of surveyed departments, actual MCI experience, and the proximity to the City of Odessa. A particular interest was paid to the answers from EMS providers that are considered mutual aid resources for the OFD.

Research Question # 3

What is the plan for developing a mass casualty response plan for the Odessa Fire Department?

Answer: The plan for developing a mass casualty response plan for the Odessa Fire Department was to form a committee to evaluate the department's current EMS response capabilities and determine what equipment and supplies were needed. The committee provided MCI and EMS incident command training to all personnel, developed simulated MCI incident practice, and a continued evaluation of the plan. The MCI response plan for the Odessa Fire Department is included as Appendix E of this paper.

Internal Survey Results:

Of the 30 internal surveys distributed, 80% were returned, and 66.5% indicated the department would benefit with developing a more comprehensive, MCI response plan. Only 29.0% disagreed, and 4.5% did not answer the question. When asked what area of an MCI response needed the most improvement, 33.5% answered training, 17% answered equipment and supplies, 29% answered practice, 33.5% answered communications, 4.25% answered command, and 25% answered all aspects of an OFD mass casualty response needed improvement. Adding the percentages of training, practice, and everything needs improvement, brings the total percentage for training as the weakest component to 87.5 %.

Since 33.5% chose communications as the weakest element and 25% answered everything needs improvement, it seems reasonable to add these two together, making this a close second to training with 78.5%. According to the studies of the researchers contained in the literature review of this paper, training and communications were the two areas that needed improvement from the responses studied.

When members of the OFD were asked how many critical patients from one incident would overwhelm the organization, the numbers ranged from 5 to 30, with the most popular number being 8 patients. The average of all the numbers was 13.18% of patients from one incident needed to overwhelm the OFD. An optional remark section of the survey gave the firefighters the opportunity to make recommendations, such as; conducting unannounced joint MCI drills with mutual aid resources and both local hospitals, practice responding and setting up a quick treatment and staging area, work with mutual aid resources to establish common radio frequencies, and train on a small scale and work up to a larger, simulated

drill. A copy of the survey is included as Appendix A and the results of the survey are contained in Appendix B.

External Survey Results

The external surveys were sent to the mutual aid resources of the OFD, and a few cities of similar size and make up of the City of Odessa. Twenty surveys were distributed and a return of 70%. The survey asked if the EMS provider had actually experienced a mass casualty incident within the past five years. Only 38.5% answered yes, and 61.5 % answered no. The average population of the cities surveyed was 21,906. Of the 99.9% of EMS providers that indicated having a MCI response plan in place, only 85.5% said incident command was utilized. When asked how many critical patients from one incident it would take to overwhelm the provider's current system, the answers ranged from 2 to 20, with an average number of patients being 8.4. Practice drills occur with 96% of the survey respondents, with only one provider stating no practice was provided.

The study indicated that 43% of the cities conduct a simulated drill at least once per year, 23% practice three times per year, 15% conduct a drill twice per year, and another 15% conduct a drill once every two years. Of particular interest to the OFD was the answers provided by the OFD mutual aid resources. All of the surrounding EMS providers have a MCI plan, utilize incident command, and practice at least once per year. One large city that responded to the survey had no MCI plan and did not have an incident command structure in place.

The information provided by the OFD mutual aid resources was very beneficial to the department in preparing an MCI response plan. Knowing all the EMS providers in the immediate area have a MCI plan, use the same command structure as the OFD, and practice at least yearly, is reassuring.

As a result of the information gained through the internal and external surveys, and the elements of a MCI plan provided from the literature review, the OFD developed and implemented a comprehensive MCI response plan (Appendix E). The OFD during future MCI practice will include all the mutual aid resources in a joint simulated drill. This will help pre-plan a method of communications and have a more organized approach to managing a large EMS incident that is bound to happen in this tornado infested area of west Texas. A copy of the external survey is included as Appendix C and the results are provided in Appendix D.

DISCUSSION

The Odessa Fire Department has not experienced an actual mass casualty incident in the past 25 years. This may be attributed to the community being very careful and avoiding dangerous situations, but considering Odessa has many of the contributing elements Butman (1982) determined would help create a MCI, luck could be the biggest contributing factor. Luck eventually runs out, good planning, preparation, and practice is a much more reasonable approach to meeting the expectations of the community, especially in a large scale EMS incident. Heightman's (2000) research and tips for MCI management proved useful in developing a MCI response plan, but the recommendation of pre-determining a set number of ambulances for a designated level of response was not considered a good idea and was not used in the OFD plan. Also Butman's suggestion of allowing dispatch to make decisions of where the command and staging areas were to be located prior to the first unit arriving did not seem reasonable, and was not included in the OFD plan.

Heightman's (1999) detailed list of recommendations pertaining to the Columbine incident was very useful with providing important elements of a MCI plan. The information

provided by FEMA (1995) about the incident command structure of an EMS incident and the detailed elements of a MCI response plan, proved to be the most effective approach to planning and managing an MCI response. The OFD plan contains many of the recommended elements and utilizes the tactical worksheets provided in this publication.

According to Pedrotti (2000), the study of the Phoenix, (AZ.) Fire Department and other Arizona fire and EMS services provided similar numbers to the numbers discovered by this researcher. The number of critical patients (7) at one incident that would overwhelm 25% of the EMS providers surveyed.

Streger's (1999) research of the Oklahoma City and World Trade Center bombings pointed out that 75% to 85% of the fatalities of an MCI will occur within the first 20 minutes of an incident, further emphasizing the need for a well planned, organized, and rapid response to a MCI. Streger's determination of communications being the most important aspect of a MCI response was consistent with the weaknesses reported in the external surveys conducted by this research. Streger's recommendations for improving communications were considered in developing the MCI response plan for the OFD.

A challenging part of implementing an organized MCI response, was the purchase of the necessary equipment and supplies. The OFD budget was just enough to cover daily operations. The estimated cost to purchase the equipment, supplies, and a trailer was approximately $40,000.00. Two grants were written and approved, the County hospital contributed $15,000.00 toward the department's efforts, and a local trailer manufacturer sold the trailer at cost. All the financial assistance received, resulted in a fully equipped, MCI response trailer at no cost to the City of Odessa.

With the information provided from this research, the OFD put forth an aggressive effort to prepare a comprehensive MCI response plan, purchase equipment/supplies, and conduct training sessions. The OFD participated in three major simulated MCI drills, two of which were monitored and evaluated by the Texas Department of Health and another with a neighboring city, which was monitored and evaluated by the Federal Aviation Administration (FAA). Each drill revealed weaknesses in the plan and response. Revisions were made and future MCI response practice is anticipated for further evaluation.

The publications of Butman (1982) and FEMA (1995) contained the most detailed elements to be included in a MCI plan. Streger's (1998) (1999) studies of the bombings of the World Trade Center and the Oklahoma City Federal Building, along with Heightman's (1999) (2000) study of the Columbine High School shootings, provided ample justification to prepare for such incidents. Brazle (2001) reported that success with a MCI could be realized through planning, preparation, and practice. Not all the recommendations provided by these researchers were used due to various reasons, but all the recommendations were thought provoking and were considered. Information gained through an internal and external survey and the contained literature review, resulted in a comprehensive MCI response plan tailor-made for the OFD.

With the knowledge of mass casualty incidents which have occurred , and the potential of future situations, every EMS provider should be very aggressive with preparing to respond to a major EMS incident. The Odessa Fire Department has accomplished a great deal in a short time with limited resources. Money is available through grants and donations. Most EMS providers have the time, and training opportunities are readily available if requested from State and Federal agencies. With money, time, and training opportunities available, a provider of emergency

medical service will have little or no excuse for not being prepared to meet the complete EMS needs of the community.

RECOMMENDATIONS

The data collected through both an internal and an external survey and the information gained through the literature review supports the concept of establishing a comprehensive MCI response plan for the OFD. The literature review contained in this research paper provided the information necessary to write an organized MCI response plan.

Problems experienced by responders of some of the worst death and injury producing incidents in the United States were included in an effort to prevent similar problems in future incidents, and give direction to EMS providers in the planning and preparation of such a response. School shootings do not just happen in Colorado, and bombings are not limited to the World Trade Center and the Oklahoma City Federal Building. Natural and man-made disasters happen every day in a community that expects the EMS provider to manage the incident with a well-organized response as outlined in the FEMA (1995) publication and the book written by Butman (1982). A successful MCI response can be realized if the EMS provider follows the recommendations reported by Brazle (2001). Planning, preparation, and practice seem to be the key to success. This is especially true when lives are at stake.

The recommendation of this author is for EMS providers to include the MCI response elements as recommended in the FEMA (1995) and Butman (1982) publications in the organization’s plan. As indicated by the Phoenix, AZ. study and reported by Pedrotti (2000), and the study of this researcher, 25% of small EMS providers would be overwhelmed with as little as seven critical patients from one incident. This could occur from a single vehicle crash.

If the EMS provider has a plan and it has not been discussed, practiced, and re-evaluated at least once in the past twelve months, the organization's next MCI response will be a great challenge. If the provider has no plan, a plan can be easily developed with the before mentioned publications. Training and practice of the plan are important elements for success, and should include all available mutual aid resources. MCI equipment and supplies are expensive, but if funding is a problem, grants are available, and donations can be solicited. Free training opportunities exist through State and Federal agencies.

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Appendix A

Odessa Fire Department
Internal Study
Mass Casualty Response Plan

The Odessa Fire Department does not have a comprehensive plan for responding to a mass casualty incident. This survey is to seek your input, and will also be used as research for an Executive Fire Officer Program assignment from the National Fire Academy. Your input will be very helpful with developing and implementing such a plan.

Please Circle Your Response

1. Do you think we need a more comprehensive plan for an MCI response? Yes No

2. What area of an MCI response needs the most improvement?

   Training Equipment/Supplies Simulated MCI Practice Communications

   All the above Other _____

3. What number of patients do you think would overwhelm our current EMS capabilities without outside assistance? _____

Remarks: (optional) (Please include anything you think should be included in an MCI plan)

_____

_____

_____

Thank you for your participation. Please return this survey to my office.

Charlie Smith, Assistant Chief

Appendix B

Odessa Fire Department
Internal Study
Results of Appendix A
Mass Casualty Response Plan

The Odessa Fire Department does not have a comprehensive plan for responding to a mass casualty incident. This survey is to seek your input, and will also be used as research for an Executive Fire Officer Program assignment from the National Fire Academy. Your input will be very helpful with developing and implementing such a plan.

Internal Survey Results

1. Do you think we need a more comprehensive plan for an MCI response?

   66.5% answered Yes **29% answered No** **4.5% no response**

2. What area of an MCI response needs the most improvement?

   33.5% Training **29% Simulated MCI Practice**

   17% Equipment/Supplies **33.5% Communications**

   25% All the above **Other** **Command**

3. What number of patients do you think would overwhelm our current EMS capabilities without outside assistance? **Average 13.1patients**

Remarks: (optional) (Please include anything you think should be included in an MCI plan)

Sample of comments: Conduct unannounced drills with mutual aid resources, train on small scale and work up to a large simulated incident, practice setting up treatment and staging areas, practice should include all the department resources and all ranks of personnel

Thank you for your participation. Please return this survey to my office.

Charlie Smith, Assistant Chief

Appendix C

Odessa Fire Department
External Study
Mass Casualty Response Plan

1. Name of organization_____

2. Population of coverage area _____

3. Has your agency actually experienced a mass casualty incident in the past five years?

Yes No

4. Does your agency have a mass casualty response plan?

Yes No

5. Does your response plan utilize the incident command system?

Yes No

6. How many critical patients from one incident would it take to overwhelm your current capability, before mutual-aid from an outside agency would be required?_____

7. How often do you conduct simulated drills and/or table top exercises to practice your response? _____

8. Of the following elements, which do you believe is the weakest part of your response plan?

Training Equipment/Supplies Communications Practice Mutual-aid Resources

All the above Other (please explain)_____

FAX COMPLETED SURVEY TO: Odessa Fire Department (915) 335-4664

THANK YOU.

Appendix D

Odessa Fire Department
External Study
Results of Appendix C
Mass Casualty Response Plan

1. Name of organization_____

2. Population of coverage area **Average population = 21,906**

3. Has your agency actually experienced a mass casualty incident in the past five years?

38.5 Yes **64% No**

4. Does your agency have a mass casualty response plan?

99.9% Yes **.1% No**

5. Does your response plan utilize the incident command system?

85.5% Yes **15.25% No**

4. How many critical patients from one incident would it take to overwhelm your current capability, before mutual-aid from an outside agency would be required?

Average 8.4 patients

5. How often do you conduct simulated drills and/or table top exercises to practice your response? 1/yr.= 44%, 2/yr.= 15%, 3/yr.= 22%, 1 every other year =15%, no drills 4%

6. Of the following elements, which do you believe is the weakest part of your response plan?

14.25% Training **.7% Equipment/Supplies** **35.5% Communications** **22% Practice**

0% Mutual-aid Resources **35.5% All the above** **0%Other** (please explain)_____

FAX COMPLETED SURVEY TO: Odessa Fire Department (915) 335-4664

THANK YOU.

Appendix E

Odessa Fire Department
Standard Operating Guidelines

Name / Subject of Guideline:	Guide Number:	Revised on:
Mass Casualty Incident	600.09	03/02/2001

PURPOSE:

To inform all personnel of the Mass Casualty Incident Plan. A mass casualty is defined as a major incident with a large number of injured victims, which may exceed the capabilities of the Odessa Fire Department. Mutual aid may be required.

There are two sets of initial procedures for dispatchers to follow, depending on whether the report is confirmed or unconfirmed.

CONFIRMED CALLS

A confirmed call is one that comes from any uniformed responder - a police officer or a fire fighter, or from any known, reliable, and responsible source such as the head of the airport or any known member of a government agency. The dispatcher may want to check the authenticity of the call by telephoning the agency in question for verification; however, this should not be done until the initial call-up has gone out.

A report may also be considered confirmed if a number of independent, unrelated calls come in from the public telling of the same incident.

UNCONFIRMED CALLS

An unconfirmed call is any call coming from the public. An unconfirmed call will be either confirmed or denied by the first paramedic unit on the scene. An estimate of the number of victims will also be provided by the unit.

ALERTING

For the purpose of alerting all responding units, dispatch, hospitals, etc. we will advice them that we have a confirmed or unconfirmed Mass Casualty Incident (MCI). In the event of a confirmed Mass Casualty Incident, the first arriving unit at the scene should determine an estimate of the number of victims and their condition, and relay this information to dispatch, so dispatch can alert the hospitals to activate their mass casualty plan.
Example: DISPATCH – “Odessa Fire Department to Medical Center Hospital: We have units responding to an unconfirmed Mass Casualty Incident (MCI) at Grandview and Interstate 20, will keep you advised.”

Example: FIRST ARRIVING UNIT - "Medic 2 has arrived at I-20 and south Grandview we have a school bus roll over, stand-by for approximate number of victims." (after a quick survey of the scene) "Dispatch, notify both hospitals that we have a confirmed M.C.I., and for them to activate their M.C.I. plan. They can expect approximately 30 victims, approximately 15 critical, 5 serious, and 10 minor injuries."

CONFIRMED MCI INITIATE INCIDENT COMMAND and DESIGNATE OFFICERS

First arriving unit will establish incident command, until relieved by higher ranking officer. Notify dispatch to activate E.O.C., if necessary, and confirm that the hospitals have been notified of M.C.I.

Incident Commander will designate the following positions;

1. **Triage Officer (field area)** in charge of patient triage in the field.
2. **Triage Officer (treatment area)** in charge of the triage in treatment area.
   - ~ establishes location
   - ~ set up treatment area with color coded flags for sorting triaged patients
   - ~ request necessary supplies and personnel
   - ~ assure adequate treatment is provided to patients, and reassess the triage of patients
3. **Transport Officer** - in charge of the transportation of the patients.
   - ~ insures patients are transported according to their triage tag. When possible, one red, one
   - ~ yellow, and one green in each Fire-Medic.
   - ~ notifies receiving hospital of the number of patients to expect, and a general description of each patients condition.
   - ~ communicates with all hospitals as to their capabilities of handling additional patients.
   - ~ Gives patient report for each Fire-Medic to the hospital, to avoid unnecessary radio traffic.
   - ~ keeping a record of the number of patients each hospital has received, and the patients triage tag number.

   Note: When possible, have one E.M.T. and one paramedic on each Fire-Medic providing transport, which will allow to maintain more paramedics in the field and/or treatment area. Instruct each Fire-Medic to bring back extra supplies, equipment, etc. from the hospital if needed.
4. **Safety Officer:** in charge of scene safety for staff and patients.
5. **Staging Officer:** in charge of staging area and keeps Incident Command informed of available resources.

NOTE:

ALL OFFICERS WILL WEAR AN ORANGE VEST, WHICH INDICATES THEIR ROLE, such as; Incident Commander, Triage Officer, Staging, etc.

PATIENT CARE IN A MASS CASUALTY INCIDENT

<u>All necessary equipment, supplies, triage tags, and backboards from all units are brought to Extrication site.</u>

It shall be anticipated that first aid supplies and backboards will be in immediate demand and will be taken to the extrication site. Two units will be taken to the Treatment area or Command Post.

All non-serious victims are collected and moved

Those victims who are able to walk generally are not seriously injured and are often referred to as the ∀walking wounded. The term walking wounded is used advisedly and with the understanding that victims who can walk may also have serious injuries. Having them move to an area away from the site and the treatment area will reduce congestion and confusion at the site. These victims must be triaged and if indicated taken to the treatment area. Several EMTs should be assigned to give first aid and care to this group.

Each victim is given a Primary Survival Scan

EMTs must be trained to perform the PRIMARY SURVIVAL SCAN. It consists of the primary survey and basic first aid treatment for life threatening injuries such as providing an airway if required, control of hemorrhage, or stabilization of chest injuries. Each victim should be repositioned when necessary, as indicated by their type of injury. Victims with head injury and those with respiratory difficulty should be sitting or with the head and shoulders elevated. Victims in shock should be lying down with their legs elevated. Victims who are unconscious, in the coma position, and those with suspected spine injury should have the neck stabilized.

Each victim is tagged

Each victim is tagged to indicate that the PRIMARY SURVIVAL SCAN has been completed. This will avoid some patients being given a PRIMARY SURVIVAL SCAN repeatedly and assure that every victim is given a PRIMARY SURVIVAL SCAN.

Only the DOAs are given a priority at this time. They should be moved only as needed to provide access to other patients.

Extensive care is given in the Treatment Center

The object of the PRIMARY SURVIVAL SCAN is to provide rapid basic treatment to patients who might otherwise die for lack of simple basic care. Extensive care to a few at this time would preclude the objective of the PRIMARY SURVIVAL SCAN.

Each serious victim is immobilized on a backboard

A complete examination at the site would be inappropriate. To avoid further injury while moving the seriously injured patients, including those with an altered state of consciousness, patients will be immobilized on a backboard. Patients with possible spinal injury must be further immobilized. Each victim must be secured to the board with straps, tape, or triangle bandages. An exception to back boarding should be considered for patients who are primarily in respiratory distress and resist lying down.

Patients are moved based on their location rather than condition

This will avoid moving over other patients. Attempting to move the more serious first will flood the treatment area and cause inadequate care. Attempt to move patients in a manner which could make all patients more accessible.

Triage Officer sets priorities

As the patients are moved to the treatment area they must pass through the triage station. The Triage Officer and any assistants will rapidly assess the patients condition and assign each victim a priority. The rapid assessment is performed by evaluating the victims general condition, skin color and temperature, respiration, pulse rate, level of consciousness and pupillary response.

The MASS CASUALTY INCIDENT tag is used to indicate the victim's priority.

BLACK-Deceased victims will be indicated with a black tag.

RED-1st priority. Victims who require urgent care, can be rapidly stabilized, an have a good salvage probably.

YELLOW-2nd priority. Patients who are urgent but will not deteriorate without treatment for 30 - 45 minutes.

GREEN-3rd. priority. Patients who are not seriously injured.

The individuals assigned to the task of triage should be selected on the basis of their rapid assessment skills and a good understanding of the objectives of MCI triage.

Patients are treated and transported as indicated by their priority

The priority given at the Triage area may be up or down graded in the treatment area when a more complete examination will be given. EMTs will place the patients in the treatment area in the zone indicated for that priority. Each patient should have a 3' area around them to facilitate treatment. Patients in shock will be placed with their feet elevated. Those with head injuries or respiratory difficulty, with the head of the board elevated. EMTs will be assigned for the care of the 2nd and 3rd priority patients until the treatment teams are available.

Patients are stabilized prior to transport

Paramedics with the assistance of EMTs will examine, assess, and treat as per standing orders. They will document vital signs and treatment and complete the Rescue Field Report on each victim in their assigned area. All efforts will be made to stabilize patients before transport.

After all RED patients have been treated in the Treatment Area, Treatment teams will be assigned to treat trapped patients in the extrication site or treating 2nd priority patients.

Patients are distributed to receiving hospitals

The Transportation Officer will maintain a list of area hospitals and record the number of patients transported to each hospital. He will rotate the assignment of patients to the hospitals to avoid overloading patients at any one hospital. Each Fire-Medic shall transport three (3) patients each, one red, one yellow, and one green tagged patient, whenever possible.

REVIEWING TRIAGE CATEGORIES

The first criteria is urgency. Is the patient urgent?

```
                    URGENT
_____________________¦_____________________
   |                                     |
  No                                    Yes
```

Victims are categorized not urgent either because their injury is local and not commonly associated with deterioration, or because they are dead. All victims whose injuries have systemic physiological implications are urgent. Therefore, patients who are not urgent are either in the Green or Black category, and patients who are urgent are either in the Red or Yellow category.

```
      NON-URGENT                          URGENT

_______________                ¦       _______________
|                                              |
    Green or Black                          Red or Yellow
       |        |                             |       |
       |        |                             |       |
Non-Systemic  Dead                     Immediately    |
     Injured                        ___________________
                                                      |
                                                   Yellow
                                                      |
                                          (urgent, systemic
                                          implication, but
                                          can wait 45 to 60
                                          minutes)
```

It is important to remember that once a patient has been classified by category, he should be tagged and placed in an area or row of patients of that category. The orderly segregation of patients by priority is a necessary part of triage. Random location of tagged patients makes the identifying of priority patients next to impossible. Where patients are not physically placed in rows by category, triage does not work effectively.

PRIMARY SURVIVAL SCAN

60 Second Assessment in a Disaster Situation with Multiple Victims

BEGINNING WITH THE CLOSEST VICTIM
REMEMBER THAT AIRWAY MAINTENANCE IS STILL THE NUMBER ONE PRIORITY

HEAD AND NECK

Check for an open airway and the presence or absence of breathing.
Once you are sure that the airway is patent,
Check for a carotid pulse.
Quickly evaluate the head, face, and neck for obvious injuries.

CHEST

EXPOSE the chest and check for obvious injuries.
Evaluate respiratory movement and the use of accessory muscles to breathe. Check the back with your hand without moving the patient to check for any bleeding.

ABDOMEN

Look for obvious injury, any abdomen distention, rigidity, or evisceration. Feel the back-side with your hand to check for bleeding. Again, try not to move the patient.

PELVIS

Check for obvious injury.
Use the barrel test or compression test to evaluate for fractures.
Check for obvious injuries to the genitalia.

LOWER EXTREMITIES

Look for obvious injuries.
Check for fracture.
Check for distal pulses.

UPPER EXTREMITIES

Check for obvious injuries and fractures.
Check distal pulse.

It is important to take no longer than 60 seconds to assess each victim. The only vital signs that are needed are the pulse, respiration, skin color and temperature. Your concern should be to establish life in each victim and to correct any immediate life-threatening situations. Do not use equipment, such as backboards, MAST suits, cervical collars, or IVs.

In the PRIMARY SURVIVAL SCAN personnel and supplies will be severely limited.

REMEMBER TO ALWAYS PROTECT YOURSELF AND THE VICTIM FROM FURTHER DANGER THAT MAY BE PRESENT.

FIRST COMPANY OFFICER ON SCENE

INCIDENT COMMANDER INITIAL RESPONSIBILITIES

Manages overall scene activities:

> Position truck to protect scene

A. Do not block access or egress of other units

> Confirms that a multi-casualty incident exists

A. Notifies dispatch to implement plan, and confirms that the hospitals have been notified.

B. Activate E.O.C., if necessary

> **AREA ASSESSMENT**

A. Problems that hamper rescue
Example:
a. Downed power lines
b. Broken gas lines
c. Danger from oncoming traffic

B. Establish sectors if incident involves too large of an area, for one Incident Commander to over see, such as a tornado which involves several blocks.

> **MEDICAL HELP**

A. With assistance of EMS crew

a. Quickly estimate maximum number of wounded and determine whether outside medical help is needed

> **SPECIALIZED ASSISTANCE**

A. Hazardous chemicals

a. Chemtrec or Haz-mat team

b. Heavy equipment

c. Debris removal or extrication

e. T.U. electric and/or Ener-Gas, etc.

SUMMARY

By the time the first responder radios dispatch, he should have completed the quick assessment that will indicate whether additional or specialized help will be needed. At the time he radios dispatch for the first time to confirm the disaster, he should report in detail the situations that exist - such as three downed power lines, leaking gas pipes, or the hazard of oncoming traffic - so that help can be called immediately while the disaster plan is implemented.

INCIDENT COMMANDER
(Secondary Responsibilities)

> Determines how incoming equipment should be routed into the scene

> Enlist help of police unit to direct incoming units

> First ambulance used as Headquarters

a. First arriving Fire-Medic crew will initiate triage
b. Position Fire-Medic safe distance from disaster
c. As subsequent Fire-Medics arrive - position them in a central location
d. Transportation officer establishes direct radio contact with hospital

> Designates rescue workers to create triage stations

A. Spread three salvage covers on ground to create treatment stations
   a. request additional medical staff to man treatment area if needed

B. Place one Colored flag at each salvage cover
   a. Red
   b. Yellow
   c. Green

> Establish Staging area

> Keep bystanders away
> Furnish necessary equipment for rescue workers

> Designate morgue area, if needed

a. Away from injured

>

> Continues to monitor scene

A. Until relieved by superior officer

B. When relieved - assist crews

Ranking Officer	-	Incident Commander
Paramedic/Driver	-	Triage Officer (field area) and (treatment area)
Paramedic/Attendant	-	Transport/Communication Officer
Training Chief	-	Safety Officer
Engineer/FFII/FFI	-	As assigned

NOTE: each Fire-Medic shall be equipped with at least 25 triage tags.