

Running head: REFINING THE MASS CASUALTY INCIDENT PLAN

Leading Community Risk Reduction

Refining the Mass Casualty Incident Plan for the Kansas City, Kansas Fire Department

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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.

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Abstract

The problem was that the regional mass casualty incident (MCI) plan had not been integrated with the Kansas City, Kansas Fire Department's standard operating procedures and medical protocols; if this was not corrected, lives could be lost. The purpose of this research paper was to develop a complete MCI plan for the department. This action research project addressed these issues: (a) what standard elements exist for MCI plans, (b) what standard elements exist in the regional MCI plan, and (c) what resources are available in the metropolitan area? A set of model elements was developed and compared against the KCKFD plans. The regional plan was also compared against the KCKFD plans. A survey was done of regional EMS providers to determine the resources available in the area. An MCI plan was developed from this research. The recommendations of this project include: (a) continued development and adoption of the MCI plan, (b) training for the department personnel, (c) discussion with the region on changes in the regional plan, and (d) discussion on the state level concerning MCI plan development.

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Refining the Mass Casualty Incident Plan for the Kansas City, Kansas Fire Department

Introduction

The Kansas City, Kansas Fire Department (KCKFD) added an ambulance service to the existing EMS first response and suppression division in July, 2004. The problem is that the regional mass casualty incident (MCI) plan has not been integrated with the department's standard operating procedures and medical protocols; if this is not corrected, lives could be lost. The purpose of this research project is to develop a complete MCI plan for the department. In preparation for developing the MCI plan, this action research project researched the following questions: (a) what standard elements exist for MCI plans and how do they compare to existing KCKFD plans, (b) what standard elements exist in the regional MCI plan and how do they compare to existing KCKFD plans, and (c) what resources are available in the metropolitan area to assist with an MCI in Kansas City, Kansas?

Background and Significance

The KCKFD is a career fire department with 420 employees, the majority certified as emergency medical technicians or paramedics. The department's primary service area resides within Wyandotte County, Kansas. According to the website of the Unified Government of Wyandotte County/Kansas City, Kansas, the county covers 155.7 square miles and is home to 158,331 residents. The Kansas State Library's website identifies Wyandotte County as the smallest in Kansas, but the one with the highest population density.

Wyandotte County is one of eight counties that make up the metropolitan Kansas City area. A regional association of city and county governments entitled Mid-America

Regional Council (MARC) serves as a metropolitan planning organization (Mid-America Regional Council, 2005). A committee of MARC directly focuses on the regional coordination and cooperation of emergency medical service (EMS). This committee, Mid-America Regional Council Emergency Rescue Committee (MARCER) is comprised of 62 pre-hospital and hospital providers with an interest in EMS. MARCER has developed a Regional Mass Casualty Incident Plan to maximize EMS resources through coordination and communications during an MCI (Mid-America Regional Council Emergency Rescue Committee, 2006). Given that an event could exceed the capabilities of any local resource, local medical protocols and standard operating procedures should be consistent with the MARCER regional plan.

The department provides fire prevention, EMS first response, suppression, ambulance, and rescue services for the City of Kansas City, Kansas and provides ambulance service to the City of Edwardsville, Kansas. In addition, the department provides mutual aid ambulance service to the City of Bonner Springs, Kansas. To provide this level of service, the department staffs 22 suppression companies and 12 ambulances, a fire prevention division, a training division, and a support services division.

From 1995 to June 2004, the department provided paramedic-level first response service and turned the patient over to an ambulance contractor for transport. The department's medical protocols and standard operating procedures were geared towards this division of labor. The department was responsible for scene stabilization, location and triage of patients, and the movement of patients to the treatment area. This is in line with the philosophy that the fire department had the training and equipment to operate in

these potentially dangerous environments. The ambulance contractor's personnel had the training and equipment to treat and transport the casualties to definitive care.

In December 2003, the Unified Government of Wyandotte County/Kansas City, Kansas tasked the department with the responsibility to provide ambulance service beginning July 1, 2004. The department's new responsibility to provide ambulance service and the absence of an ambulance contractor necessitates a refinement to the department's medical protocols and standard operating procedures. The department's MCI plan must now encompass rescuing victims, moving them to the treatment area, treating their injuries, and either releasing them on-scene or transporting them to the appropriate facilities for definitive care.

Wyandotte County Emergency Management's Local Emergency Operations Plan includes a hazard analysis of the county, including several that could generate multiple patients. High hazard events include a hazardous materials incident and severe weather-related infrastructure failures, including failures due to thunderstorms, tornados, flooding, winter storms, and extreme temperatures. Moderate hazards include pipeline emergencies, fire, railway emergencies, radiological incidents, highway/street incidents, and communications failures. (Bob Evans, personal communication, 2006). Jane's Mass Casualty Handbook: Pre-hospital points out that, while attention has been focused on terrorism, a community is at greater risk of a natural disaster than a manmade disaster/terrorist event. The basic response system should be used for both natural and manmade disasters (DeAtley, et al, 2003). With a high population density, the department must be prepared to respond to and mitigate an incident with multiple casualties. During 2005, the department handled 23 multiple-patient incidents requiring a

response from three or more ambulances. The vast majority of these are motor vehicle collisions, accompanied by house fires and violent crimes. Included in the division's short history is a high-profile workplace shooting with 8 victims and an industrial explosion at a recycling business that sent 30 patients to the hospital. Historical analysis demonstrates that multiple patient incidents will occur and a hazard analysis demonstrates that the potential exists for these incidents to exceed a single department's capabilities. The MCI plan needs to be applicable to incidents of various sizes and compatible with regional plans to insure optimal patient care and minimal risk to life.

The Department of Homeland Security has formulated a National Preparedness System, which is designed to meet the all-hazards preparedness goal. The objective of the system is to maintain levels of capability to prevent, respond to, and recover from disasters, both natural and man-made (White House, 2006). This MCI plan is designed to strengthen the department's response to disasters in the city.

The United States Fire Administration (USFA) has identified as an operational objective to respond appropriately in a timely manner to emerging issues (National Fire Academy, 2003). It is anticipated that the refined MCI plan that results from this research will better prepare the department to respond to mass casualty incidents. This organizational change should minimize the chances that lives will be lost due to incomplete planning and gaps in execution of the plan.

With its goal to develop comprehensive multi-hazard risk-reduction plans led by the fire service, this research project is also related to the objective of the National Fire Academy's (NFA) Leading Community Risk Reduction course (Federal Emergency Management Agency, 2004).

Literature Review

A review of current literature concerning MCI response will incorporate legal documents, published text on the material, periodical articles on MCI response, published after-action reports and lessons learned from recent incidents and conclude with information from local, regional, and state MCI documents. This section is organized into eight components: command, medical branch, triage group, treatment group, transportation group, extrication group, medical supply group and communications.

There are two legal documents to review when developing an MCI response plan. On the federal level, the use of the National Incident Management System (NIMS) is mandated by presidential directive. Federal programs may also make the adoption of NIMS a condition of receiving federal assistance. This system provides the organizational template to be used nationally during a domestic incident. It is applicable across jurisdictions and disciplines. The NIMS training materials include checklists for the major incident command positions and forms to be utilized for the tracking of events and personnel during the incident. (Federal Emergency Management Agency, 2004)

Transformation from Planning to Operations: Emergency Medical Services in Disaster Response, published in the Annals of Disaster Medicine states that NIMS provides all responders and incident managers an integrated set of core elements and best practices. It points out that the incident command system incorporated into NIMS outlines five functional areas, command, operations, planning, logistics, and finance/administration. The document stresses that all responders must be trained in incident command and NIMS. Finally, it identifies that NIMS prescribes interoperable communications be available for both the incident and for information management. (Smiley, et al, 2004)

On the state level, the Kansas House of Representatives passed a bill covering intrastate mutual aid in 2006. This bill was signed into law by Governor Kathleen Sebelius on April 13, 2006 and is effective July 1, 2006. It specifies that each political subdivision in the state operate under the national incident management system. The purpose of the bill is to create an intrastate mutual aid system for use by Kansas political subdivisions. This law includes references to the medical response to an incident. Personnel from a responding jurisdiction will remain under their local medical protocols and standard operating procedures while under the operational control of the jurisdiction receiving mutual aid. The operational control will be maintained by the incident management system. (Kansas House Bill 2982) Due to the recent nature of adoption of this statute, the state division of emergency management is still in the process of developing the guidelines and procedures for implementation of the mutual aid system.

A. J. Heightman, the editor-in-chief for JEMS, has specialized in management training for MCIs. In a presentation entitled Mass Casualty Incident Management, he encourages services to have a predetermined dispatch and response plan for multiple levels of MCI. The author defines a Level 1 MCI as having fewer than 10 injured. A Level 2 MCI is 10 to 25 injured. A Level 3 MCI is greater than 25 injured. There should be escalation procedures built into the plan, with the incident commander having the flexibility to alter the response as needed. An MCI plan should be functional and easy to remember, ideally resembling daily operations. The system should have sufficient training and incident critiques so that all personnel are familiar and comfortable with the MCI plan. (Heightman, 1996)

There are eight items offered by the author of Mass Casualty Incident Management to insure MCI scene success. There needs to be written MCI standard operating procedures. Second, triage tags and other MCI items should be used on any size or type of incident. Next, an abbreviated MCI plan and triage details should be available on visor and clipboard decals. Fourth, emergency personnel should have standard identification tags that permit them access to the incident. An MCI plan should have standardized operational checklists for the command personnel to use. The Transportation Group should have standard patient status sheets to facilitate proper distribution and tracking of patients from the scene. A service can utilize small bicycle traffic cones to form on-scene “cattle chutes” for patient flow and to limit access to other areas. Finally, glow in the dark light sticks in appropriate colors can facilitate scene marking at night. (Heightman, 1996)

The Orange County Fire Services’ Multi-Casualty Plan outlines five functions that occur at every MCI. They are command of the incident, triage of the patients, treatment of the patients, loading of the patients and obtaining the hospital destinations for the patients. To do this, the minimum number of Incident Command positions that must be established are Incident Commander, Treatment Unit Leader, Ground Ambulance Coordinator, and Medical Communications Coordinator. (Ken Miller, personal communication, 2004)

The Massachusetts Emergency Medical Care Advisory Board has published a document entitled Statewide Multiple Casualty Incident Standards for Local Planning. The goal of the MCI plan should be to insure that victims receive rapid medical assistance through adequate, coordinated efforts. The purposes are to minimize loss of

life, disabling injuries, and human suffering. The plan should include a system to dispatch medical resources when the local service requires assistance. It is vital that the plan be an extension of the service's day-to-day operations.

The document lists the topics an MCI plan should include. These topics include risk assessment, organizational structure, declaration of an MCI, the MCI response, mutual aid, and plan evaluation. The development of an MCI plan should incorporate both local and regional responders. All plan participants should have a copy of the plan once it is developed. They recommend that all participants review the plan every three years and provide training to their service once per year. A mock exercise should occur every two years, although allowances for an actual MCI are acceptable. A post incident analysis should occur after both exercises and actual events. This analysis should involve all participating organizations and result in a detailed report. The Massachusetts document incorporates both EMS services and EMS first response services in the planning. The document does caution that the MCI plan does not incorporate the concept of total destruction to the community. The loss of a community's services and systems is a catastrophic event and outside the scope of an EMS agency's plan for mass casualties. (Massachusetts Emergency Medical Care Advisory Board, 2004)

Incident Command

The National Standard Curriculum for Paramedics identifies that an incident command system is necessary to provide a clear system of command and control. It should be applicable to both a single commander as well as the use of unified command for multi-discipline incidents. The system should expand or contract as necessary for the incident. It should be used for routine as well as large scale emergencies. The command

system should be one that overcomes jurisdictional and geographic boundaries. The command system should include a defined span of control, which the curriculum identifies as one supervisor per six workers. (National Highway Traffic Safety Administration, 1998)

The curriculum outlines the major functions of command, including establishing command, scene assessment, communications, resource management, and the common command problems at a mass casualty incident. Command should be established according to a local threshold. Setting a low threshold, i.e. more than two patients, allows for frequent practice. Once established, command must identify which group or sector functions are necessary for the given incident. Working with fire and police in a unified command and using tactical worksheets are two elements considered vital to the command function. The first unit on the scene should make a quick and rapid assessment of the situation to relay to dispatch and other resources enroute to the scene. A precise assessment should be done as soon as possible. This assessment includes the type of incident and potential duration, the need for special equipment for trapped victims, the number of patients in each triage category, and any additional resources that are needed. Command should communicate the establishment of command over the radio. The radio traffic can be very distracting for the commander and a communications aide should be used to monitor radio traffic during large incidents. Resources should be requested early, with command issuing instructions on the deployment of the resources. Dispatch should have a written procedure on mutual aid and how to obtain the necessary resources. The use of a staging area to manage incoming resources slows their deployment and may prevent their premature commitment to the incident. A staging officer should manage

resources not yet assigned to the scene. Common problems identified in the curriculum include the failure to make widespread notification of the incident, not performing a rapid initial stabilization of all patients, not gathering patients rapidly in treatment areas, not performing proper triage, providing overly time consuming care to patients, premature transportation of the patients, not distributing patients among medical facilities, not being able to identify the EMS commander in the field, not conducting mass casualty preplanning and not providing adequate training of all personnel. (National Highway Traffic Safety Administration, 1998)

The Model Procedures Guide for Emergency Medical Incidents identifies that the first arriving company must initiate incident command and will be faced with a number of decisions. Responsibilities of this company include a safety assessment of the hazards, a survey of the scene to estimate the number of victims, providing dispatch with a size-up, requesting additional resources, setting up the scene for EMS functions, and beginning the triage process. The need for incident command escalates as the size of the incident grows. The model points out that there will be more tasks to accomplish than the on-scene resources can handle. The model emphasizes that no EMS agency can effectively manage a mass casualty incident without assistance from other agencies. Of special importance is assistance when the coordination of mass casualty care occurs within a larger incident. Preplanning for these types of incidents will expedite the dispatch of assistance while local responders do as much as is safely possible with the resources on the scene. The tendency of the initial responders is to treat patients and wait for help before initiating incident command. This results in confusion and a rescue effort. (Model Procedures, 2002)

The EMS Incident Management System reaffirms that there are five tasks for the initial responding company to perform. These include an initial assessment of the overall incident, including the size, site, and hazards, establishing a command post, and requesting additional units as needed. This company begins triage and directs incoming resources to the appropriate area. (Christensen & Maniscalco, 1998)

The same book notes that the tasks of the initial responding company can be emotionally difficult. In these circumstances it is necessary to assume a management role instead of a treatment role. It cautions the responder that if they find themselves treating a patient, then both the company and the remainder of the patients are in real trouble because there is no one in the command role. (Christensen & Maniscalco, 1998)

EMS Incident Management notes ten major problems found in an analysis of disasters over the last 50 years. Communications systems suffer from instant overload, which keeps key units from relaying urgent messages. The streets around the scene become gridlocked, blocked by both sightseers and emergency vehicles. Supplies run out very quickly, creating logistical problems that last throughout the incident. Patients are not distributed to the right facility by ambulance or private vehicle, overcrowding the closest facility. Freelance emergency responders arrive un-requested and cause traffic and coordination problems. Basic human services such as shelter, food, clothing, and financial assistance are neglected or slow to arrive. Rescuers become fatigued when sleep periods and crew rotation are not utilized. The media is present in abundance, creating traffic problems and clogging existing cellular capability in the area. Dispatch centers will be overwhelmed with phone calls. 'Finally, the emergency responders pay a

high emotional price, creating the need for stress management both on-scene and after the action is complete. (Christensen & Maniscalco, 1998)

Mass Casualty Incident Management provides numerous tips and tricks the author has gleaned from his experience. The presentation begins with four major points about MCI responses. First, emergency responders must take whatever actions will most impact the welfare of the patients, regardless of the chaos that is presented. Second, personnel cannot be criticized for not doing things for which they have not been trained. Third, the principles of MCI management, including command, communications, and control, must be utilized on a daily basis. Finally, the decisions made must be based on the idea that we are there to save as many lives as possible while realizing that it may not be possible to save all of them. (Heightman, 1996)

Basic facts or scene size-up must be broadcast as soon as possible so that dispatch, other responding units, and command staff have the maximum time to prepare to deal with the incident. Before calling in a report, observe as much of the scene as is possible in 30 seconds. Thoughts should be processed in a logical order. Think about what needs to be said and figure out how it can be said in as few words as possible. Think about how the transmission will be interpreted so as to accurately convey the message. Finally, announce the MCI “level” so other resources know the approximate number of patients they will be treating. Remember that the first five minutes of action will determine the final outcome. (Heightman, 1996)

Departments should consider formalizing the assignment of resources dispatched to an MCI. The St Louis area sends a specific assignment to an MCI. Each level brings five advanced life support ambulances, one engine or rescue squad, and one medical

officer to the scene. (Eric J. Hall, personal communication, 2006). The addition of an engine or rescue squad brings extra personnel to the scene to assist with treatment and movement of patients. The addition of a medical officer brings a command-aware person to the scene to assist with management of the incident, relieving ambulance crews to treat patients or provide transportation.

Command and the individuals in charge of important functions must be easily identified on the scene. Identifiable vests must be utilized early and on all MCI scenes. Different functions should have different color vests to make them easily identifiable from a distance. This includes paramedics having a unique color to facilitate identifying advanced life support resources on-scene. Nighttime operations can be enhanced by attaching appropriately colored light sticks to the vests. (Heightman, 1996)

Each command assignment should be accompanied by an assistant to keep things on track, document actions taken, and monitor radio traffic. The assistant, as well as anyone assigned a functional group, i.e. Triage Group, can wear the same color vest as their group supervisor, only turned inside out. (Heightman, 1996)

Checklists for each function are invaluable to scene success. Items should be listed in order of importance or sequential order. They serve as memory joggers for the person fulfilling that role. The checklists can remind all concerned that actions were handled after being requested. In a moment of review, they can give the function leader the opportunity to review what has been done and stay on track with what remains to be completed. Finally, they serve as a preparation tool for critiques and post-incident documentation. (Heightman, 1996)

The Station Club Fire in Rhode Island occurred February 20, 2003. There were 96 fatalities at the scene and over 200 patients requiring triage, treatment and transportation. The after action report compiled for the Department of Homeland Security outlines numerous findings and recommendations that will be included in appropriate sections. Command requests for resources were handled by the regional fire alarm office. An emergency assistance plan lists the dispatch sequence for both municipal and private EMS resources. Unfortunately, this was not followed during the fire. Fire alarm dispatchers did not have quick access to the phone numbers for private ambulance companies that do not routinely respond to 9-1-1 calls. Self-dispatched resources created confusion for both the fire alarm office and command. Finally, the emergency assistance plan outlines how fire stations will be back-filled during an emergency, but does not list how EMS resources will be back-filled from outlying areas. (Department of Homeland Security, 2004)

The Northern Virginia Mass Casualty Incident Plan incorporates agencies in Virginia, Maryland, and the District of Columbia. The plan outlines how these agencies will work together in response to a natural or manmade disaster or peaceful mass gathering that overwhelm the local resources. When an Incident Commander requests assistance, their request should include the nature and location of the emergency, the number of personnel requested, any specialized personnel or equipment or supplies that are needed, and the location for the units to report along with any special instructions. The agency receiving the request will promptly advise the extent to which the request can be fulfilled. The plan also cautions that jurisdictions will not send assistance without a request for help. Unique to this plan is the concept of a complex. This is two or more

individual incidents in the same general proximity. These individual incidents are brought under the control of a single Incident Commander or Unified Command in order to facilitate management. The commander then directs an operations section at each incident. (Northern Virginia Mass Casualty Incident Plan, 2004)

The Northern Virginia plan includes the inventory for the Mass Casualty Support unit. The support unit is designed to provide a specific cache of equipment depending on the level of response requested. The supply list is based on the patient distribution being 30% Red, 30% Yellow, and 40% Green. They also include specific patient treatment area packages, patient assessment kits, and administration packages that can be brought to the scene on short notice. (Northern Virginia Mass Casualty Incident Plan, 2004)

Medical Branch

The Medical Branch, led by a director, is responsible for the following organizational groups: triage, treatment, and transportation. In addition, an extrication or rescue component may be needed. These basic positions can be supplemented by supporting positions if the incident escalates. The Incident Commander will need to develop this Medical Group to insure that these functions are staffed, managed and directed. Resources follow the patients. Initially the focus is on location and triage of the victims. The patients must then be moved to the treatment area. As patients arrive in the treatment area, that area will need increased staffing. Command should be kept advised of resource needs and, as resources are no longer needed in a specific area, they should be reassigned to other areas of need. (Model Procedures, 2002)

The Medical Branch director, wearing a blue vest, should provide an initial EMS-specific scene report to dispatch and to the receiving hospitals. A specific radio

frequency should be assigned to coordinate responding ambulances. The designated approach route, staging area, and patient loading area should be provided to all responding ambulances. Command should be kept informed of progress being made by the branch. (Heightman, 1996)

At the Station Club fire, Medical Branch command positions were filled spontaneously by experienced and capable EMS officers. Even though they were from different departments these officers knew each other, which proved invaluable. There were no position checklists or administrative logs available to these commanders. This fact coupled with the intense activity kept the commanders from writing many things down. None used an aide to either keep track of radio traffic or make notes. There was no distinguishing identification available for the commanders, which made it difficult for mutual aid personnel to recognize those commanders. (Department of Homeland Security, 2004)

The July 7, 2005 bomb detonations in London resulted in four separate incidents involving three trains and one bus killed 52 people and caused 700 injuries. In London, there were issues with keeping track of patients and responses. The communications failures led to multiple gaps in the response logs. Someone on-scene should be tasked to be the record-keeper so that records are available even if a means of communication is unavailable. Tracking of patients was also problematic. Delays of several hours were common before family members could be notified. (Greater London Authority, 2006)

An issue that surfaced in London was the large number of survivors that were not seriously injured. No specific agency was tasked with the responsibility to work with the uninjured and walking wounded. Many ended up leaving the scene without ever giving

their name to an authority or receiving any advice or support. The recommendation is to identify which agency is responsible for the survivor reception area and establish one near the site. The personnel assigned to the site should do the following things with all the uninjured or walking wounded: provide any necessary first aid and triage; collect and disseminate information on what happened; give advice about what to do; provide assistance in contacting loved ones; provide assistance on getting them to their destination safely; provide support in their distress and provide information about where to get support later; and collect their name and contact information for the police investigators. (Greater London Authority, 2006)

FIRESCOPE defines the medical branch as the basic means for the Incident Commander to manage a large number of patients. The branch is expandable depending on the needs of the incident. While there may be multiple geographically separate medical groups, there should only be one patient transportation group. Otherwise it is likely that hospitals will be overloaded with patients from multiple scenes.

(FIRESCOPE, 2004)

Triage Group

The Triage Group, led by a supervisor, is responsible for the initial primary triage of all patients. Triage determines the site treatment needs and assures that the initial triage and treatment are complete. This group includes litter bearers to move the patients to the treatment area. Triage is also responsible for supervising the safety and treatment of entrapped patients until they can be moved to the treatment area. (National Highway Traffic Safety Administration, 1998)

The triage function is to account for all persons and patients, assess for life-threatening injuries, and move patients to the treatment area. Triage should be established as close to the impact area as is safely possible. Occasionally medical treatment may be provided if the extrication of the patient will be delayed. The Simple Triage and Rapid Treatment (START) system is a nationally-recognized triage system that is rapid and basic, making it easy to deploy. The movement of patients to treatment can be personnel-intensive. The Triage Unit leader must request the appropriate number of personnel early in the incident. A fatigue factor must be taken into account if the patient movement process will be extensive. (Model Procedures, 2002)

Triage may be assigned the responsibility of setting up a morgue. Triage works with the coroner to coordinate the disposition of the deceased. Normally deceased victims are not moved from the position found. Occasionally it may be necessary to move deceased victims to access other patients. In addition, patients may expire after being moved, but before transport. These victims must be placed in a morgue established in a secure area. (National Highway Traffic Safety Administration, 1998) Custody must be maintained until relieved by the local coroner. (Model Procedures, 2002)

Triage is the process of sorting the victims. Triage on large-scale events is the toughest job that an EMS person will ever have to do. Triage personnel have to accept the fact that some severely injured patients may have to be given a low priority and may die in order for many other patients to survive. The goal at an MCI is to produce the largest number of survivors. (Heightman, 1996)

Initial triage is limited to a walk-through to approximate the number of patients and tag patients according to severity. Early treatment is limited to correction of life-

threatening situations such as opening an airway or applying a pressure dressing. Using color-coded tape tied to the patient's arm or leg gives triage personnel a quick visual clue to the patient's severity and is not prone to blowing in the wind the way a triage tag may do. The patient then has a triage tag applied at the entrance to the treatment area. The key to success in triage is that the triage tags are used on a routine basis. Personnel will use tags quickly and efficiently if they are very familiar with the system. (Heightman, 1996)

The Triage Group supervisor, wearing a red vest, may be able to accomplish all the necessary triage tasks on a small scene. On a large scene, assistants wearing red vests turned inside out should be assigned to specific areas or sectors. They are to provide a report back to the supervisor that includes the number of patients triaged and their severity. (Heightman, 1996)

Triage, working in conjunction with incident command, will need to insure that the entire area is searched. Victims may have been thrown from the scene. They often walk away in a confused state secondary to injuries or shock. They may seek shelter in nearby homes or buildings. Consider using dog teams to check the area, particularly if the devastation is spread over a large area. (Heightman, 1996)

Physicians may be used in this group to facilitate difficult triage decisions. They may also be used at the gateway between triage and treatment to make secondary triage decisions. Finally, their skills may be necessary to perform emergency surgery to facilitate extrication. (National Highway Traffic Safety Administration, 1998)

In Rhode Island, the first triage area formed spontaneously around an ambulance as it pulled up. The second was set up across the street at an inn. Nearly 190 victims

were processed through these two areas. Unfortunately, the incident commander and the triage commanders did not know the number of triage areas being used or the number of patients being evaluated. Triage was based on state pre-hospital care protocols rather than based on the Simple Triage and Rapid Transport (START) system outlined in the state MCI plan. Responders did sweep the incident area for other victims before terminating operations. Some victims were sheltered in police cars and there was a delay before responders were aware of them. (Department of Homeland Security, 2004)

Treatment Group

The Treatment Group, led by a supervisor, is responsible for locating and setting up a treatment area. This area is generally away from the immediate action area and includes treatment areas for patients triaged into immediate, delayed, and minor categories. Treatment should re-evaluate all patients entering the treatment area and re-triage them if necessary. Adequate patient care should be provided to patients in each treatment area. Treatment must coordinate with command, triage, and transportation throughout the incident. This area is responsible for moving patients to transportation as those resources become available. (National Highway Traffic Safety Administration, 1998)

The treatment function is to provide patient stabilization and medical care until patients can be transported to a hospital or other medical facility. A designated treatment area is necessary when the number of patients exceeds the number of available ambulances. This function requires the highest commitment of personnel of any operational demand in a multiple-casualty incident. The treatment area should be located in an area that is easy for patients and litter-bearers to access and is close to the

ambulance loading area. An important note made in this model is to think big. The treatment area must be able to handle the patients and medical personnel, as well as having a corridor to allow patient pick-up. (Model Procedures, 2002)

The treatment area should have a defined entrance, with personnel assigned to re-evaluate and possibly re-triage any patients entering the treatment area. First-arriving patients should be placed near the exit point in their appropriate treatment area. If transport resources are available, patients tagged as “immediate” may be placed directly on the ambulance. This saves setting down and lifting up patients. The Treatment Group leader should direct this bypass to immediate transport. (Model Procedures, 2002)

Well organized treatment areas separated by color-coded sections are crucial to the success of a large MCI scene. Colored flags, colored traffic cones, and colored light sticks work well for this purpose. Colored salvage covers carried on fire apparatus can provide an easily-identified, dry area to treat patients. Approach the fire department about purchasing red, yellow, and green salvage covers and carrying one of each on each apparatus. (Heightman, 1996) Color-coded triage tags and color-coded treatment area tarps help eliminate confusion, help with accountability, and improve the effectiveness of the operation. Have fire department vehicles carry red, yellow, green and black tarps for use in treatment areas. (McCarthy, et al, 2006)

Using lengths of fire hose in a wide to narrow cone shape to direct patients into the treatment area will help coordinate the movement of patients into the treatment area in an orderly fashion. These “cattle chutes” force personnel and patients to travel in pre-designated patterns and avoid the temptation to sneak by the system. They must be

established early in the incident and utilized throughout. The treatment officer can stand at the point of the cone to re-triage or tag patients as necessary. (Heightman, 1996)

Lighting will be important in the treatment area. It is not possible to treat that which cannot be seen. Arrangements must be made to properly light the treatment area during nighttime incidents. (Heightman, 1996)

Physicians may be used in this group to perform specialized invasive procedures. They may also provide more accurate assessments and direct specific treatments for patients whose transportation is delayed. (National Highway Traffic Safety Administration, 1998)

In Rhode Island, the treatment area was set up in a nearby inn. Without this resource, patients would have spent quite a bit of time in the winter weather. Treatment was well organized, which is believed to have contributed to how quickly critical patients were removed from the scene. Police assisted with security in the treatment area, which helped calm some of the intoxicated patients. (Department of Homeland Security, 2004)

The Orange County EMS Agency Interim Multi-Casualty Incident Response Plan specifies that one paramedic and EMT should be assigned to each “immediate” and “delayed” patient. One EMT can provide care to groups of “minor” triaged patients. (Orange County EMS Agency, 2004)

Transportation Group

The Transportation Group, led by a supervisor, is responsible for establishing ambulance staging and landing zones as needed. Transportation determines the availability of hospitals and their treatment capabilities. This group coordinates the distribution of patients to the appropriate receiving facilities. A major function of this

group is to track patients leaving the incident, including their name and triage tag number, the unit transporting the patient, and their destination facility. (National Highway Traffic Safety Administration, 1998) Transport may have to provide directions to regional medical facilities for mutual aid ambulances. Depending on their familiarity with the service area, mutual aid providers may only know a few facilities.

Transportation officers in Rhode Island discovered that they had to make last-minute changes in routing because the ambulance personnel did not know how to get to regional hospitals. (Emergency Medical Services: Supplying Mutual Aid Service Providers with Directions to Hospitals, 2005).

The transportation function determines the patient's destination based on medical condition and hospital availability. Arranging all the transportation needs is the primary responsibility of this function. Contact with medical facilities early in the incident should be accomplished to determine their capabilities to receive patients. Information relayed to the hospital by the Treatment Unit leader should include the type of incident, the location, an estimate of the total number of patients and an estimate of the number of patients by triage category. (Model Procedures, 2002) Ambulances will not be the only form of transportation to the hospital. Hospitals will receive patients by private vehicle, taxis, and other forms of transportation. Five times as many victims arrived by non-ambulance vehicles during the subway attacks in Tokyo in 1995. Patients may self-refer to facilities with which they are familiar, rather than one closest to the incident site. It is important to get the hospitals notified early in the incident so they can prepare for this influx of patients (Medical Care: Victim Self-Referral Following a Mass Casualty Incident, 2006). Attempt to transport family members to the same hospital, if possible.

Tag severed body parts and properly package them for transportation to the appropriate hospital. (McCarthy, et al, 2006).

The Transportation Group director should assign additional resources as needed. These may include a medical communications coordinator to keep hospitals informed of incident progression, a ground transportation coordinator, an air transportation coordinator, and an ambulance staging coordinator. If the treatment area is not located in an area that allows for traffic flow, litter bearers will be necessary to move patients from the treatment area to the waiting ambulances. The Transportation Group will require a radio channel separate from the command officers' tactical channel to facilitate communications between the scene and the hospitals. Hospitals should be kept informed of patients leaving the scene, their estimated time of arrival at the facility and basic patient information. At larger incidents, it has proven beneficial to locate an ambulance staging area away from other staged resources to facilitate access and egress. (Model Procedures, 2002)

The Transportation Group supervisor, working with the Medical Branch director, should identify routes for arriving resources to use, blocked roads, the ambulance staging and patient loading areas, the equipment stockpile area, and any equipment needed from arriving ambulances. This information must be communicated to each arriving ambulance. The Transportation Group has at least 10 to 15 minutes to establish the ambulance staging area and patient loading area, identify the equipment stockpile area, and obtain a radio channel to facilitate communication with the receiving hospitals. (Heightman, 1996)

Ambulance staging is necessary to avoid gridlock near the scene. This improves the flow of traffic through the scene and the efficiency with which patients can be transported from the scene. A separate staging area is also necessary for apparatus and vehicles that will remain on scene for the duration of the incident. This avoids having ambulances blocked in by driverless vehicles. Command should advise early in the incident a location for staging and, if necessary, a response route to get to staging. Blocked access routes should be relayed to dispatch so incoming resources can be informed. Ambulance personnel should also be informed of secured exit routes so they do not try to leave the same way they arrived. (Heightman, 1996)

Consider three staging areas, one for ambulances, one for fire apparatus, and one for police. Utilize police to keep the ambulance transportation corridors open. Train with the police department on staging operations. This may help with the establishment of staging areas, keep their vehicles from clogging key streets, and provide the commander with staging officers until adequate personnel are on the scene. (McCarthy, et al, 2006)

Crews assigned to ambulances dedicated to patient transport should remain with their ambulance. It is better if ambulances do not have to back up, particularly after loading a patient. If necessary to back a unit, have it back into position prior to loading rather than back out to leave. (Heightman, 1996)

Staging in Rhode Island worked well once a chief officer recognized the need for it and set it up in an available parking lot. As with other positions, no written records were kept by the staging officer. Staging was able to utilize a radio frequency normally

reserved for agency to agency communications to coordinate operations with the transportation commander. (Department of Homeland Security, 2004)

The Transportation Group supervisor must be acutely aware of patients ready for transport and move them out as quickly as resources allow. The personnel assigned to the Transportation Group and those arriving to transport patients should not get involved in the treatment area. The supervisor or their assistant should be the only point of contact with receiving hospitals. Transporting ambulances should not contact the hospital unless their patient's condition deteriorates. Receiving hospitals should be requested to provide updated capability during the incident so as to distribute patients most effectively.

(Heightman, 1996)

Transportation resources include helicopters, ambulances, buses, and private vehicles. Helicopters should have a landing zone set up away from the incident to avoid creating noise and rotor wash problems on the scene. An ambulance can be dedicated to transporting helicopter-bound patients to the landing zone. Ambulances familiar with the scene should be sent back to the scene for more transports. Use noninvolved ambulances to facilitate inter-hospital transports to free up bed space in the closest hospitals.

Transportation should consider sending patients with minor injuries to hospitals further away from the incident to lessen the burden on close hospitals. Buses can be utilized for this purpose. Helpful citizens may transport victims from the scene prior to the arrival of emergency services. This will impact the hospitals closest to the incident. Notify the hospitals as soon as possible after the incident is detected to give them as much warning as possible to prepare for unannounced arrivals. (Heightman, 1996)

In Rhode Island, transport was handled by the same person doing triage. This was possible because of their experience. As resources are available, the jobs should be split. It was difficult in some cases to distinguish between advanced life support and basic life support ambulances and personnel. Helicopters were not used because the hospitals were using them for inter-facility transfers. Buses were used to transport minor injuries, although there were some problems getting enough medical equipment on the buses. Triage tags were not used, making it difficult to track volume and specific patients. A transport log was not used so authorities were unable to determine the exact number of patients transported to which hospitals and the vehicle that transported them. The majority of the patients went to five hospitals. Six other hospitals only received a few patients and six did not receive any patients. Mutual aid companies were not always familiar with hospital locations, making it necessary to change their destination to a location with which they were familiar. (Department of Homeland Security, 2004)

The Orange County EMS Agency Interim Multi-Casualty Incident Response Plan specifies that patients triaged “immediate” will go to the nearest available paramedic receiving facility. Patients triaged “delayed” will go to the nearest, most appropriate and available paramedic receiving facility. Trauma patients will go to the nearest available trauma center or the nearest paramedic receiving facility if the trauma centers are at capacity. Burn patients will go to the nearest available burn center or the nearest paramedic receiving facility if the burn center is unavailable, at capacity, or patient condition dictates. Finally, patients triaged as “minor” will go to any paramedic receiving facility, preferably those that are further away. The plan also notes that non-paramedic receiving facilities can be utilized in extenuating circumstances. This plan

also includes a word of warning for hospitals. It notes that efforts will be made to accommodate each hospital's reported ability to handle patients, but the hospitals should be prepared for a higher number of patients. (Orange County EMS Agency, 2004).

Orange County Fire Services give the dispatchers the responsibility to notify the Incident Commander when paramedic resources are depleted. It is then acceptable to transport patients without paramedics. In this case, basic life support units can be requested and command should consider consolidating treatment areas to free on-scene personnel. (Ken Miller, personal communication, 2004)

Orange County Fire includes direction for the establishment of the apparatus staging area. Fire resources should be staged in an area that does not interfere with the ambulance movement through the scene. Both apparatus and ambulance staging areas are to be established early in the incident. (Ken Miller, personal communication, 2004)

Extrication Group

The Extrication Group, led by a supervisor, is responsible for rescuing inaccessible patients. The supervisor determines the type of equipment and resources needed and orders those through command. Appropriate safety equipment must be available to all personnel operating within this area. Any necessary support equipment such as gasoline, electricity, and compressed air, must be readily available. The Extrication Group must work with triage and treatment personnel to facilitate patient care during extended extrication or special rescue operations. (National Highway Traffic Safety Administration, 1998)

The Extrication Group must handle the location and removal of trapped patients, including moving them out of the area. Their responsibilities include the safety of

patients and rescue personnel. In addition, this group is responsible for initial patient treatment that may be necessary prior to extrication. In general, all patients should be triaged and tagged prior to extrication. Critical patients are then moved first. If the incident is spread over a large area, multiple extrication groups may be necessary to accomplish the tasks at hand. If there are multiple egress routes, then checkpoints must be established to coordinate personnel and patient activities in the extrication area.

(Model Procedures, 2002)

Medical Supply Group

Depending on the organization of the incident, a Medical Supply Group may be designated either under the Medical Branch in Operations or under Logistics. The Medical Supply Group is organized to provide essential equipment to the Medical Branch. Often this equipment is pre-positioned during planning events and must just be re-located to the incident site. (National Highway Traffic Safety Administration, 1998)

Large incidents will consume the available supplies on responding vehicles. The Medical Supply Group must locate additional supplies and deliver them to the scene. In addition, this group handles the distribution of supplies to operating companies to insure equitable distribution. (Model Procedures, 2002)

Equipment and supplies arrive on the scene from two sources. The immediately available source is incoming units. They should be advised what equipment, i.e. backboards, they need to leave on the scene. An organized equipment stockpile area facilitates this process and will require someone be assigned to manage the area. The second source of medical supplies is pre-planned equipment stockpiles. These are equipment caches specifically designed for rapid deployment. They may be located in

fire or EMS stations, in central facilities, or in high-volume areas such as nursing homes, high-rises, stadiums, and airports. The high volume areas offer several advantages including immediate availability in the event a rapid evacuation is necessary from the facility. The equipment is also pre-positioned in central locations in the service area and can be picked up by a support vehicle and transported to the incident. (Heightman, 1996)

In London, all the sites had problems with obtaining enough medical supplies, including triage tags and stretchers. One recommendation from the after-action report is that the London Ambulance Service consider pre-positioning some medical supplies in or near subway stations for rapid deployment. (Greater London Authority, 2006)

Communications

Some modifications to communications techniques are needed during a large incident. Communications should be calm to set an orderly tone. Users should not use codes or signals; plain English is preferred. There should be a common radio channel between command and the various sectors and divisions. Radio traffic should be minimized, relaying only the minimum necessary information. Face-to-face communication is preferred to limit radio traffic. (National Highway Traffic Safety Administration, 1998)

Preplanning for MCI incidents should include designating common, interoperable channels for dispatch, ambulance, and hospital communications. Interoperable radio equipment and channels should be available on every EMS unit for communication between dispatch and the unit, unit to unit, and unit to the hospital. Software should be utilized to report hospital and ambulance status. Ambulances should be equipped with Global Positioning Satellite (GPS) based vehicle locators to facilitate closest-unit

dispatch to an incident. Finally, ambulances should be equipped with route guidance systems. (Model Procedures, 2002)

Portable radios are necessary for on-scene operations. Keep in mind that batteries may need to be replaced during extended operations, particularly for command personnel. Remote headsets or speaker microphones are ideal for monitoring radio traffic in a noisy and confusion-filled environment. Portable megaphones rapidly command attention in crowds and help the user to get work accomplished quickly. Cellular telephones can be helpful tools, particularly when communicating with outside resources or when radio channels are busy. There should be a back-up for these as cellular sites may not be available in the quantity necessary during an MCI. Runners and assistants can be a valuable on-scene communications tool for commanders and should not be overlooked. (Heightman, 1996)

Use standard MCI nomenclature, i.e. immediate, delayed, and minor. Using “critical” and “non-critical” may not be specific enough for triage purposes. In addition, certain patients with non-life threatening physical injuries may be part of the immediate group because they are emotionally uncontrollable. (McCarthy, et al, 2006).

After-action communication should be done on any incident involving three or more patients. A standard report completed by the EMS officer and an analysis meeting with all participating agencies are used to identify opportunities for improvement. These opportunities are then made available to EMS management and training staff. (McCarthy, et al, 2006).

In Rhode Island, communication with the hospitals was disappointing. Command staff members attempting to reach hospitals by cellular telephone were met with busy

signals, no answer, or someone answering that could not provide them with the information they needed. Mutual aid providers were uncertain how to contact the hospitals. Patient reports were given verbally to the staff assuming care and very few paper patient care reports were completed until afterwards. (Department of Homeland Security, 2004)

In London, a mixture of UHF and VHF radios are used in addition to cellular telephones. The cellular system was overwhelmed and the UHF system did not work. Neither of the radio systems worked in the subway tunnels. This limited the communications capability between the multiple scenes and their control room and between the scenes and the hospitals. On-scene managers did not have the ability to request more ambulances, equipment and supplies. They did not know what was happening at the other scenes to facilitate coordination. They were unable to determine which hospitals were overloaded and which were still receiving patients. (Greater London Authority, 2006)

Communication issues in London resulted in resources sent to one scene being redirected to another because it was more visible. Until commanders realized this almost two hours into the incident, one subway scene had very few resources while the bus scene was well provisioned. The London Ambulance Service is working on a procedure to dispatch a predetermined number of ambulances to a scene based on initial reports rather than waiting until they are specifically requested. (Greater London Authority, 2006)

Specialty and non-acute hospitals in London were not notified of the incidents. Staff became aware of the incidents when responders showed up seeking medical supplies. Some staff from these facilities ended up providing on-scene care until patients

could be transported. A notification system for non-acute care facilities in the area is one of the recommendations in the after-action report. (Greater London Authority, 2006)

Orange County specifies the type of documentation to be done on the patient care delivered. In an incident with 20 or fewer patients, a patient care report is to be completed on all patients, including those found deceased on the scene. If there are more than 20 patients, triage tags are the only field documentation of patient care. The triage tag is to remain with the patient upon arrival at the hospital or morgue. (Orange County EMS Agency, 2004)

Orange County also specifies in their plan the means available to contact hospitals in the event the primary radio system is down. This includes providing a list of hospitals and phone numbers in the plan for ready-reference. (Orange County EMS Agency, 2004)

Pinellas County's Mass Casualty/Fatality Standard Operating Procedure applies any time there are four or more advanced life support units on a scene providing patient care or when there are more than 25 serious injuries or deaths. The procedure includes an action checklist for the communications center. The action checklist incorporates basic incident information like type of incident, number of possible casualties, location, commander, command post location, requests made, and the staging areas. It includes a list of key notifications and their functions, if required by the Incident Commander. It also includes a list of hospital emergency rooms, their official capacity, their potential capacity using hall beds and extra rooms, and the total hospital bed capacity. This form includes blank columns to track hospital status and the patients allocated to each.

(Pinellas County Office of Public Health Preparedness, n.d.)

In a more dated plan, the State of Vermont developed a model emergency operations plan for mass casualty incidents. This plan includes dispatch and response protocol, incident management, position responsibilities, equipment and personnel procedures, and communications. The communications section includes specifying that three channels are needed for radio communication and the specific purpose for each. The first channel is for communication with the hospitals for medical control. The second is for direction of EMS units and coordination between officers on the scene. The third is for communications between the EMS control officer and the dispatcher. (Vermont Department of Public Safety, 1996)

In summary, there is a wealth of information available on the development of a mass casualty incident plan. The building blocks are established in the national paramedic curriculum. Incident command, the medical branch, triage, treatment, transportation, extrication, medical supply and communication must all be addressed in a comprehensive plan to respond to these types of incidents. Material available over the last 10 years enhances these building blocks with real-world experience. Local plans should be built on this experience for the benefit of the local community. Finally, two after-action reports from recent events reinforce that planning, preparation and training are necessary to refine a local plan. This literature review, while extensive, proved to be very valuable in setting up a model plan.

Procedures

Literature on MCIs, developing plans on response to MCIs, after-action reports of incidents, and MCI plans from local, regional, and state agencies were reviewed as part of the literature review. Appendix A contains a “model” MCI plan was developed with

the elements identified as essential in the literature review. The Kansas City, Kansas Fire Department's three existing policies relating to MCIs were then compared against the elements in this model. A table in Appendix B shows this comparison. The department's policies were then compared with the regional MCI plan, again looking for elements of commonality. This comparison is illustrated in Appendix C.

A survey of the 62 MARCER members was conducted as part of this project. The purpose of the survey was to assess the resources available in the metropolitan area and assess the support those resources would need to respond to an incident. Copies of the survey were distributed to agency representatives through email. A follow-up distribution of the survey was done one week later through email. In total, sixteen surveys were returned, equating to a return rate of 26%. A copy of the survey is included in Appendix D and a summary of the results is included in Appendix E.

The outcome of this project was a draft MCI plan for the Kansas City, Kansas Fire Department. This is included in Appendix F.

The major limitation of this project is that it will apply to only one department. In a real situation, the department will be relying on outside agencies to support the operation. The elements and plans formulated in this project need to be incorporated into the plans of neighboring departments and into the regional plan. Considerations in this regard are included in the Recommendations section.

The other major limitation is that the plan must be incorporated into training. The department must educate all personnel on the plan and conduct training on the elements of the plan. Ideally this training would include participants from neighboring departments to provide time for familiarization. Neighboring departments should also

conduct MCI training and this department should send participants to their exercises as well.

Definitions

The following terms relate to the discussion the management of a mass casualty incident.

Advanced Life Support (ALS) ambulance: an ambulance staffed with at least one paramedic and the equipment required to provide advanced life support medical care to the patient.

Basic Life Support (BLS) ambulance: an ambulance staffed with emergency medical technicians and the equipment required to provide basic life support medical care to the patient.

Emergency Medical Service (EMS): the organization responsible for responding to requests for medical assistance in the community, providing pre-hospital medical care, and transporting patients to the hospital.

Extrication Group: the group responsible for freeing patients from the wreckage. Led by a Supervisor and reports to Operations Branch.

Incident Commander: the person responsible for directing and controlling resources and operations on the scene of an incident.

Mass Casualty Incident (MCI): an incident with multiple patients and/or unusual event that has a negative impact on EMS and hospitals.

Medical Branch: the organizational group responsible for directing and controlling medical resources and operations on the scene of an incident. Led by a Director and reports to the Incident Commander.

Medical Supply Group: the group responsible for securing medical supplies for the incident. Led by a Supervisor and reports to Logistics.

Mid-America Regional Council (MARC): a bi-state regional association of city and county governments in the Kansas City metropolitan area.

Mid-American Regional Council Emergency Rescue Committee (MARCER): a committee of MARC that focuses on the regional coordination and cooperation of emergency medical services.

Mutual aid: resources from outside the local jurisdiction available to assist with the incident.

National Incident Management System (NIMS): a comprehensive incident management system applicable to all jurisdictions.

National Preparedness System: a federal system to prevent, respond to, and recover from emergencies.

Simple Triage and Rapid Treatment system (START): system developed in Newport Beach, California to triage large numbers of patients at an incident.

Staging Officer: the person responsible for managing the resources awaiting assignment or deployment.

Transportation Group: the group responsible for coordinating transportation resources and assigning hospital destinations for patients leaving the incident. Led by a Supervisor and reports to Medical Branch.

Treatment Group: the group responsible for managing the area that provides on-scene treatment to patients prior to transport. Led by a Supervisor and reports to Medical Branch.

Triage: sorting patients according to the severity of their injuries.

Triage Group: the group responsible for conducting triage of all patients at the incident. Led by a Supervisor and reports to Medical Branch.

Results

Action research methods were utilized, including a review of government documents, educational curriculum for paramedics, published resources, after-action reports, and plans from local, regional, and state EMS agencies. A wealth and variety of information was used to answer the following questions.

Question #1: What standard elements exist for MCI plans and how do they compare to existing KCKFD plans?

The KCKFD plans, as mentioned in the Background and Significance section, do not provide the department with a comprehensive response plan for an MCI event. The literature review resulted in a collection of elements that should be addressed in a comprehensive plan. These elements divide into general principles, incident command functions and responsibilities, medical branch functions and responsibilities, the duties of the triage group, the duties of the treatment group, the duties of the transportation group, including medical communications, the function of the extrication and medical supply groups, although they are not a function of the medical branch, and the principles of communication.

The KCKFD plans incorporate 1 of the 14 general principles. Incident command is well documented in the fire department, with 7 of the 19 elements documented. The medical branch has 3 of 7 elements included. The triage group has 2 of 8 elements. Treatment and Transportation cover 1 element each of the respective 10 and 19 ideal

elements. Extrication, while covered in other departmental plans, is not included in the three plans reviewed. The medical supply group is not included in any of the plans. Of the 12 elements of communication, 1 is included in the departmental plans reviewed.

Questions #2: What standard elements exist in the regional MCI plan and how do they compare to existing KCKFD plans?

The MARCER regional MCI plan is organized in a different manner than the standard elements. The sections used include overview, implementing the mass casualty incident plan, triage assessment and treatment procedures, emergency communications, pre-incident and post-incident activities, and appendices. The appendices include regional EMS, hospital, and hazardous materials resources, an index of relevant regional plans, incident command position descriptions, incident command position checklists, a copy of the triage tag adopted by the region, and a list of the regional equipment caches. The departmental plans reviewed include minimum elements from the regional plans.

Question #3: What resources are available in the metropolitan area to assist with an MCI in Kansas City, Kansas?

The survey instrument was utilized to identify resources that may assist with the management of an MCI in Kansas City, Kansas. Thirteen agencies have Advanced Life Support (ALS) ambulances available while two have Basic Life Support (BLS) ambulances available. Ten agencies would provide those units to cover the city, while thirteen agencies would provide them for use on the incident scene. Two agencies can provide medical branch management teams. Seven agencies can provide mass casualty supplies. Two agencies can provide equipment for responder rehabilitation. One agency has a medical technical rescue team available. Two agencies can provide a mobile

communications team. Finally, four agencies can respond with patient identification and tracking equipment.

In response to the process of approval to send mutual aid, ten agencies can dispatch the aid automatically while six must get the approval of a chief officer first. Nine agencies may need assistance to locate the scene as they do not have metropolitan maps available in the units. Only four agencies have their vehicles equipped with portable radios capable of on-scene communications. Nine would need to be provided with radios on-scene. Two agencies that do not transport within the metropolitan area with any frequency would need directions to local hospitals.

Eleven agencies are willing to have their ambulances sent back to the scene, rather than having to utilize fresh units that are unfamiliar with the scene. Twelve agencies have protocols that allow treatment without contact with medical control if they are out of radio range. Thirteen agencies have protocols that allow transport to an alternative care facility rather than an emergency room if so directed by the transport officer.

Discussion

The breadth of knowledge available on the management of an MCI is staggering. When doing online research for this paper, this researcher found page after page of MCI articles. Many centered on the aftermath of Hurricane Katrina. Other recent tragedies include the Station Club fire in Rhode Island and the explosions on the transit system in London. After-action reports on these events were being released as the research was conducted. These proved very valuable when translating educational material into practical applications.

Two of the resources utilized were originally published in 1996. The presentation by Heightman entitled Mass Casualty Incident Management still contains timely information that is beneficial to the reader ten years later. The Vermont Basic Emergency Operations Plan, while brief, also has key elements that every agency should consider when formulating their local plans.

In addition to Vermont, Massachusetts and California are two states that have a very proactive approach to MCI management. Massachusetts published their MCI Standards for Local Planning. California utilizes FIREScope as their basis for local plans. The same type of guidance is not available from the Kansas Board of Emergency Medical Services. The problem of planning is compounded for this department because the Kansas City metropolitan area spans both Kansas and Missouri. The situation is similar to the Northern Virginia MCI plan cited, which incorporates responders from Virginia, Maryland and the District of Columbia.

The literature review showed that there are many elements that should be included in an MCI plan. The research comparison of the local plans to the model elements showed that the local plans must be made more complete. Many of the elements may be understood given that every paramedic has completed essentially the same training in MCI response. These elements should still be included in the written plan so they may be included in the education activities of the department and internalized through repeated practice. Internalized elements will flow much better than those that exist only in the educational curriculum in an initial course of instruction.

The challenges of medical supply and communications were cited both in Rhode Island and in London. The department does not have plans outlined for inter-

jurisdictional notification and communication. There are regional plans and resources available, but there is only one person on the department that knows how to access them and that is this researcher. Two other command staff members would perform admirably if needed, but would be hampered by the lack of documentation. Medical supply issues have been addressed on the regional level, but the department has not informed its personnel on how to obtain the resources.

There were some concepts that were uncovered during the literature review that stood out. The concept of an ambulance staging area separate from fire apparatus staging appears to have significant benefit. The ambulances will leave the scene as soon as they are loaded, whereas the fire apparatus will remain until the scene is released. Combining the two may cause ambulances to be blocked in by driver-less apparatus.

The concept of a survivor reception area surfaced in London. MCI plans have always addressed the injured. The few uninjured were managed under those plans. In London, rescuers were faced with hundreds of survivors and responders did not have plans in place to take care of their needs.

Several of the sources addressed the need to perform treatment after dark. The use of colored light sticks attached to command position vests and treatment area flags improve the ability to identify these important positions. Knowing where and how to obtain light towers is normally an incident command or logistics function. The Medical Branch Director should make sure the needs of the medical areas are addressed as well.

The survey results illustrated the strength of a metropolitan response. While the department may not have all the resources necessary to manage a large incident, the resources are available from neighboring departments. The department may choose to

develop some of the identified capabilities in the future. Until that time, it will be important for those in command to know what resources are available in the region and how to integrate them into the plan.

Recommendations

This action research project resulted in a draft MCI plan for the Kansas City, Kansas Fire Department. This plan will undergo significant review before adoption. The department's medical command staff must review the plan for operational effectiveness. The Fire Chief and the department's medical director will need to review the plan to insure that it is properly integrated with department policies and medical protocols.

Adoption of this plan will initiate the process to train all of the department's personnel on its concepts. Classroom presentations and discussion should be followed by practical exercises. Dispatch personnel will require a training curriculum focused on their role in an event. Training should also be provided to law enforcement, hospital, health department, and emergency management personnel, outlining their roles in the plan.

Concurrent with the departmental discussions, MARCER should review this paper and the recommendations. Significant areas should be coordinated with regional plans. These areas include the identification of incident command positions, task checklists for all the positions, the use of standardized incident command forms, and inventories of regional medical supply caches. MARCER should also review the potential behind command officers from multiple departments assuming incident command positions.

MARCER is in a position to approach metropolitan departments and the regional training committee about sponsoring annual regional exercises. With regional financing and resources, a department should be able to plan and execute an exercise and invite regional participation. Other departments should commit to sending ambulances and command staff to participate in the exercises. If six departments in the region would commit to sponsoring such an exercise, a significant number of response personnel could be trained on the plans. In addition, command staff from various departments would have the opportunity to work together and reinforce the concept that incident command positions do not have to be filled by a single department's personnel.

The Kansas Board of Emergency Medical Services is also in a position to improve statewide planning for these types of incidents. The documents obtained during the course of this project illustrate the proactive approach states have taken to prepare EMS statewide managing a mass casualty incident. Suggestions include taking an active role in developing model plans, providing assistance to local agencies developing their plans, enhancing the state communications system to provide inter-agency on-scene communications capability, and facilitating dissemination of post-incident reviews.

The department and the region are ready to respond to a mass casualty incident. The recommendations outlined in this paper would serve to strengthen the response. It is hoped that not only will the citizens of the Kansas City metropolitan area benefit from this planning, but that future readers would find this paper useful when crafting their own MCI response plans.

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Appendix A

Model Elements of a Mass Casualty Incident Plan

General Principles

- Use of NIMS to manage incidents
- Availability of interoperable communications
- Predetermined dispatch and response plan for multiple levels of MCI
- Escalation procedures built into plan
- Plan is functional and easy to remember
- Include training and incident critiques
- Written MCI plan
- Triage tags and MCI items used on any size incident
- Abbreviated MCI plan and triage details available on visor and clipboard decals
- Identification tags for EMS personnel
- Standard operational checklists for command personnel
- Standard patient status sheet for Transportation Group
- Use of cones, tape or lengths of fire hose to direct patient flow and limit access
- Use of colored lights to mark the scene at night

Incident Command

- Clear system of command and control
- Scalable to the size of the incident
- Used at routine incidents as well as large scale emergencies
- Overcomes jurisdictional and geographic boundaries
- Defined span of control
- Establishment of command
- Identification of group functions necessary for the incident
- Use of tactical worksheets/checklists for each function with items in order of importance or sequential order
- First unit establishes command and performs a rapid assessment of the situation including hazards, the MCI level, estimate of the number of victims, additional resources that may be needed, and relays to dispatch and other resources
- First unit sets up the scene for EMS functions and begins the triage process
- Communicate establishment of command and change in command on the radio
- Appoint a communications aide on large incidents
- Request resources early and include instructions on their deployment
- Written procedure for dispatch on mutual aid, how to obtain resources and how to backfill resources
- Use a staging area and appoint a Staging Officer to prevent premature commitment
- Commanders and supervisors must wear identifiable vests

- Vests should be color coded for specific functions as well as labeled for the function
- Colored light sticks to attach to the vests should be available for nighttime operations
- Accompany command assignments with an assistant to document, monitor radio traffic, and keep things on track

Medical Branch

- Appointed by the Incident Commander
- Establish Triage, Treatment, and Transportation Groups
- Provide EMS-specific scene report to dispatch and the receiving hospitals
- Obtain radio frequency to coordinate responding ambulances
- Designate an approach route, staging area, equipment stockpile area, and patient loading area and provide this information to all responding ambulances
- Keep the Incident Commander informed of progress
- Consider establishing a survivor reception area for the uninjured

Triage Group

- Perform initial primary triage of all patients utilizing the START system
- Move patients to the treatment area
- Care for trapped victims until they can be moved
- Establish morgue in a secure area for placement of deceased patients that must be moved or who expire after movement
- Use color-coded tape tied to the patient's wrist (primary) or leg (secondary)
- Use tape and triage tags on a routine basis for familiarity
- Insure the entire area is searched
- Incorporate physicians if available

Treatment Group

- Locate and set up treatment area away from the immediate action, but easily accessible by litter-bearers and transport units
- Evaluate and tag all patients entering the treatment area
- Provide care for patients in the treatment area
- Treatment area must be big enough for all the patients and medical personnel
- Should have a definite entrance and exit
- First-arriving patients placed near the exit
- Use colored flags, traffic cones, paint, salvage covers, light sticks to separate treatment areas
- Request lighting through Incident Command for the treatment area for nighttime operations
- Incorporate physicians if available
- Consider using police officers for security in the treatment area

Transportation Group

- Establish ambulance staging and loading areas and helicopter landing zones
- Consider locating the ambulance staging area away from other staging areas to facilitate movement
- Locate the landing zone away from the incident and utilize an ambulance to transport patients to the helicopters
- Determines hospital availability and capability
- Inform hospitals of the incident type, location, estimate of the total number of patients, and an estimate of the number of patients by triage category.
- Coordinate distribution of patients to appropriate receiving facilities
- Track patients leaving the incident, including name, triage tag number, unit transporting, and destination
- Provide directions to facilities as needed
- Attempt to transport family members to the same hospital
- Tag severed body parts and package for transport
- Consider a Medical Communications Coordinator, an Air Transport Coordinator, and an Ambulance Staging Coordinator
- Assign litter bearers to move patients from Treatment to the loading area
- Obtain separate radio channel for communication from the scene to hospitals
- Inform hospitals of patients leaving the scene, their estimated time of arrival and basic patient information
- Identify routes for arriving resources to use, the ambulance staging area, the patient loading area, the equipment stockpile area, and egress route from the scene.
- Keep crews with transport ambulances, use litter bearers to bring patients to the ambulance
- Orient the patient loading area to avoid having the ambulance back up after the patient is loaded
- Request that ambulances be sent back to the scene if needed rather than sending new crews that are unfamiliar with the incident set-up
- Assign medical personnel to buses to facilitate the transport of minor injuries to more distant hospitals

Extrication Group

- Rescue inaccessible patients
- Utilize appropriate safety equipment for all personnel in this area
- Coordinate with Triage to facilitate patient care until the patient can be moved
- Patients normally accessed in order of severity, unless less-severe patients must be moved to get to the severely injured patients

Medical Supply Group

- Collect and organize medical equipment
- Relocate pre-positioned medical equipment to the incident
- Inform arriving ambulances of needs for medical supplies and the location of the equipment stockpile area

Communications

- Calm, orderly, clear-text communications
- Radio channel for command and the branches
- Limit radio traffic to only the minimum necessary information
- Use face-to-face communications and runners when possible
- Interoperable radio channels should be available for command, ambulance and hospital communications
- Equip ambulances with GPS units and route guidance systems
- Make arrangements for portable radios and spare batteries
- Remote headsets or speaker microphones assist in noisy environments
- Portable megaphones may be useful in crowds
- Cellular telephones may be useful if connections can be maintained
- Use standard terminology
- Conduct after-action review of any incident with three or more patients, including a standard report by the EMS officer and an analysis meeting with all participating agencies

Appendix B

Comparison of the Model Elements with KCKFD Policies

Comparison of the Model Elements of a Mass Casualty Incident Plan with the Kansas City, Kansas Fire Department Mass Casualty Incident Protocol (MCI), Incident Command of Medical Scenes (ICMS) and Incident Command System (ICS) Standard Operating Procedures. A checkmark indicates the element exists in the KCKFD policy indicated.

<u>Model Elements</u>	<u>MCI</u>	<u>ICMS</u>	<u>ICS</u>
General Principles			
• Use of NIMS to manage incidents			
• Availability of interoperable communications			
• Predetermined dispatch and response plan for multiple levels of MCI			
• Escalation procedures built into plan			
• Plan is functional and easy to remember			
• Include training and incident critiques			
• Written MCI plan		√	
• Triage tags and MCI items used on any size incident			
• Abbreviated MCI plan and triage details available on visor and clipboard decals			
• Identification tags for EMS personnel			
• Standard operational checklists for command personnel			
• Standard patient status sheet for Transportation Group			
• Use of cones, tape or lengths of fire hose to direct patient flow and limit access			
• Use of colored lights to mark the scene at night			
Incident Command			
• Clear system of command and control			√
• Scalable to the size of the incident			√
• Used at routine incidents as well as large scale emergencies			√
• Overcomes jurisdictional and geographic boundaries			
• Defined span of control			
• Establishment of command	√	√	√
• Identification of group functions necessary for the incident			

<u>Model Elements</u>	<u>MCI</u>	<u>ICMS</u>	<u>ICS</u>
<ul style="list-style-type: none"> • Use of tactical worksheets/checklists for each function with items in order of importance or sequential order 		√	
<ul style="list-style-type: none"> • First unit establishes command and performs a rapid assessment of the situation including hazards, the MCI level, estimate of the number of victims, additional resources that may be needed, and relays to dispatch and other resources 	√		
<ul style="list-style-type: none"> • First unit sets up the scene for EMS functions and begins the triage process 			√
<ul style="list-style-type: none"> • Communicate establishment of command and change in command on the radio 			
<ul style="list-style-type: none"> • Appoint a communications aide on large incidents 			
<ul style="list-style-type: none"> • Request resources early and include instructions on their deployment 			
<ul style="list-style-type: none"> • Written procedure for dispatch on mutual aid, how to obtain resources and how to backfill resources 			
<ul style="list-style-type: none"> • Use a staging area and appoint a Staging Officer to prevent premature commitment 			
<ul style="list-style-type: none"> • Commanders and supervisors must wear identifiable vests 			
<ul style="list-style-type: none"> • Vests should be color coded for specific functions as well as labeled for the function 			
<ul style="list-style-type: none"> • Colored light sticks to attach to the vests should be available for nighttime operations 			
<ul style="list-style-type: none"> • Accompany command assignments with an assistant to document, monitor radio traffic, and keep things on track 			
 Medical Branch			
<ul style="list-style-type: none"> • Appointed by the Incident Commander 			√
<ul style="list-style-type: none"> • Establish Triage, Treatment, and Transportation Groups 	√		
<ul style="list-style-type: none"> • Provide EMS-specific scene report to dispatch and the receiving hospitals 			
<ul style="list-style-type: none"> • Obtain radio frequency to coordinate responding ambulances 			
<ul style="list-style-type: none"> • Designate an approach route, staging area, equipment stockpile area, and patient loading area and provide this information to all responding ambulances 			
<ul style="list-style-type: none"> • Keep the Incident Commander informed of progress 		√	√
<ul style="list-style-type: none"> • Consider establishing a survivor reception area for the uninjured 			
 Triage Group			
<ul style="list-style-type: none"> • Perform initial primary triage of all patients utilizing the START system 	√		√
<ul style="list-style-type: none"> • Move patients to the treatment area 		√	√

Model Elements

MCI ICMS ICS

- Care for trapped victims until they can be moved
- Establish morgue in a secure area for placement of deceased patients that must be moved or who expire after movement
- Use color-coded tape tied to the patient's wrist (primary) or leg (secondary)
- Use tape and triage tags on a routine basis for familiarity
- Insure the entire area is searched
- Incorporate physicians if available

Treatment Group

- Locate and set up treatment area away from the immediate action, but easily accessible by litter-bearers and transport units
- Evaluate and tag all patients entering the treatment area
- Provide care for patients in the treatment area
- Treatment area must be big enough for all the patients and medical personnel
- Should have a definite entrance and exit
- First-arriving patients placed near the exit
- Use colored flags, traffic cones, paint, salvage covers, light sticks to separate treatment areas
- Request lighting through Incident Command for the treatment area for nighttime operations
- Incorporate physicians if available
- Consider using police officers for security in the treatment area

√

Transportation Group

- Establish ambulance staging and loading areas and helicopter landing zones
- Consider locating the ambulance staging area away from other staging areas to facilitate movement
- Locate the landing zone away from the incident and utilize an ambulance to transport patients to the helicopters
- Determines hospital availability and capability
- Inform hospitals of the incident type, location, estimate of the total number of patients, and an estimate of the number of patients by triage category.
- Coordinate distribution of patients to appropriate receiving facilities
- Track patients leaving the incident, including name, triage tag number, unit transporting, and destination
- Provide directions to facilities as needed

√

Model Elements

MCI ICMS ICS

- Attempt to transport family members to the same hospital
- Tag severed body parts and package for transport
- Consider a Medical Communications Coordinator, an Air Transport Coordinator, and an Ambulance Staging Coordinator
- Assign litter bearers to move patients from Treatment to the loading area
- Obtain separate radio channel for communication from the scene to hospitals
- Inform hospitals of patients leaving the scene, their estimated time of arrival and basic patient information
- Identify routes for arriving resources to use, the ambulance staging area, the patient loading area, the equipment stockpile area, and egress route from the scene.
- Keep crews with transport ambulances, use litter bearers to bring patients to the ambulance
- Orient the patient loading area to avoid having the ambulance back up after the patient is loaded
- Request that ambulances be sent back to the scene if needed rather than sending new crews that are unfamiliar with the incident set-up
- Assign medical personnel to buses to facilitate the transport of minor injuries to more distant hospitals

Extrication Group

- Rescue inaccessible patients
- Utilize appropriate safety equipment for all personnel in this area
- Coordinate with Triage to facilitate patient care until the patient can be moved
- Patients normally accessed in order of severity, unless less-severe patients must be moved to get to the severely injured patients

Medical Supply Group

- Collect and organize medical equipment
- Relocate pre-positioned medical equipment to the incident
- Inform arriving ambulances of needs for medical supplies and the location of the equipment stockpile area

Communications

- Calm, orderly, clear-text communications
- Radio channel for command and the branches

Model Elements

MCI ICMS ICS

- Limit radio traffic to only the minimum necessary information
- Use face-to-face communications and runners when possible
- Interoperable radio channels should be available for command, ambulance and hospital communications
- Equip ambulances with GPS units and route guidance systems
- Make arrangements for portable radios and spare batteries

- Remote headsets or speaker microphones assist in noisy environments
- Portable megaphones may be useful in crowds
- Cellular telephones may be useful if connections can be maintained
- Use standard terminology
- Conduct after-action review of any incident with three or more patients, including a standard report by the EMS officer and an analysis meeting with all participating agencies

√

Appendix C

Comparison of the MARCER MCI Plan with KCKFD Policies

Comparison of the components of the Mid-America Regional Council Emergency Rescue Committee Regional Mass Casualty Incident Plan for Metropolitan Kansas City (MARCER) with the Kansas City, Kansas Fire Department Mass Casualty Incident Protocol (MCI), Incident Command of Medical Scenes (ICMS) and Incident Command System (ICS) Standard Operating Procedures. A checkmark indicates the element exists in the KCKFD policy indicated.

<u>MARCER</u>	<u>MCI</u>	<u>ICMS</u>	<u>ICS</u>
Definition of an MCI—tax the responding agencies and as determined by the Incident Commander			
Definition of a Disaster—natural or man-made event that has an unusual or severe effect, threatening or causing injury to multiple individuals			
NIMS will be used, ICS will be used for event management			
ICS allows departments to fill out command staff through mutual aid resources, if needed.			
Implementing the MCI Plan			
First Unit on the Scene			
--Assess the situation and check for unusual hazards			√
--Advise the communication’s center of the situation, including patient count, if any			
--Establish a preliminary command post, giving the exact location. Maintain command and control of the disaster location until relieved.			
--Initiate triage	√		√
Management assumes command responsibility on arrival, advises the communications center of such, as well as locations of command, triage, and staging			

MAR CER

MCI

ICMS

ICS

Incident Commander determines if it is an MCI and requests additional resources, including mutual aid if needed

If a CBRNE event, treat as a hazmat scene and request a hazmat team response

Criteria for requesting mutual aid

- An emergency meeting the MCI or disaster definition has occurred or appears imminent
- Requesting agency has committed all available resources and additional resources are needed to ensure quality pre-hospital care.

Procedures for requesting mutual aid

- IC informs the communications center of the nature and location of the emergency, the number of personnel, specialized personnel and equipment needed, and the location where the assisting units should report.
- Mutual aid requested through mutual aid coordination center either by the communications center or by the IC directly to the coordination center.
- IC contacts the EMS System Coordination Center to request an MCI alert sent to the closest hospitals or issued metropolitan-wide.

Functional Areas and Personnel

- Command Post (green flashing light)
- Staging Area (flag)
- Triage Area (flag)
- Treatment Area (flag)
- Transport Area (flag)
- Public Information Area/Joint Information Center (flag)

On-scene identification of emergency responders

Regional standing orders implemented

Use of helicopters as appropriate

Role of Law Enforcement

- Officers trained to report the nature of the incident to their communications center

MARCER

MCI

ICMS

ICS

--Law enforcement functions include securing the scene, providing traffic control, preserve the crime scene, and investigations.

Triage

--First unit surveys the scene to make a quick evaluation of all injured persons, stopping to treat airway and severe bleeding.

√

--IC informs communications of the nature of the incident, exact location, approximate number of injured persons, and additional resources needed. Information relayed through regional EMCC to the hospitals.

--First arriving unit conducts triage after the initial evaluation. Large incidents may require triage to be subdivided into geographic sectors.

√

√

--Color categories for triage identified and defined (Red, Yellow, Green, and Black).

√

Treatment

--Set up when patients cannot be immediately transported after triage.

--Treatment officer designated by Medical Branch Leader

--Treatment Officer responsible to re-evaluate patient condition, direct definitive care (IV, medications, etc), keep Medical Branch Leader informed of needs for personnel, supplies, and equipment, coordinate patient disposition with the Transport Officer, and coordinate the actions of physicians and/or other medical personnel.

Patient Tracking

--Triage tag filled out with as much information as possible. Portion of triage tag retained by Transport Officer, indicating destination hospital for the patient. Retained tags turned over to those responsible for notifying family members, i.e. American Red Cross.

--When available, utilize electronic internet-based patient tracking system integrated with EMSsystem

If necessary, patients may be moved outside of the region utilizing procedures in the MMRS plan

MARCER

MCI

ICMS

ICS

Deceased patients left in place at aircraft accident scenes. If necessary to move them, place a tag where the patient was found. Debris should not be moved unless absolutely necessary. Scene should be sealed off from the public.

Emergency Communications

- Radio traffic limited to essential communications
- Units identified to Command with Department Name, Unit Type, and Unit Number
- Unit assumes task or group identity until task is complete.
- All communications made in plain language
- Units should make sure receiving unit is ready to copy before sending the body of the message
- Certain keywords must be understood by all responders: Withdraw, Evacuate, and all clear.

√

√

MARCER Med Channel system is utilized for scene to hospital communications. Multiple hospitals can be patched together by MARCER control.

EMSystem is utilized to provide information on hospital emergency room status, hospital patient capacity, availability of staffed beds and availability of specialized treatment capabilities. It is the primary method of communicating hospital status and capabilities and coordinating patient routing during an MCI

EMSystem includes the capability to provide information on EMS resources available to respond to the scene.

HEAR radio system serves as a backup to the EMSystem.

Wireless phones may be available as a backup communications system.

Mobile communications vehicles are available to deploy to the scene for interoperable communications networks and tools.

Mass Casualty equipment caches with the capability to treat 50 to 100 patients are available in the region.

MARCER will appoint a review task force within two weeks of an MCI to review the response & report back to MARCER.

MARCER

MCI

ICMS

ICS

The plan will be reviewed bi-annually and exercised annually.

Appendix—Regional EMS Resources with 24-hour phone number, average number of units in service 24 hours a day, and additional ambulances available within 1 hour.

Appendix—Regional hospitals with Emergency Room direct phone number

Appendix—Regional Hazmat Teams with contact information (non-24 hour numbers)

Appendix—Index of Regional Plans with relevance to the MCI plan

- EMS System Policies and Protocols
- Kansas City Metropolitan Community Plan for Diversion
- Kansas City Metropolitan Area National Disaster Medical System (NDMS) Plan
- Regional Public Health Emergency Plan (Missouri Region A)
- Missouri Bioterrorism Region A Hospital Plan
- Kansas Regional Hospital Plan—Northeast Kansas Region
- Mid-America Local Emergency Planning Committee (LEPC) Plan
- Kansas City Metropolitan Medical Response System (MMRS) Plan
- Regional Coordination Guide
- Local Emergency Operations Plans (LEOP)

Appendix—Incident Command System Position Descriptions

- Incident Commander
- Medical Branch Leader
- Liaison Officer
- Public Information Officer
- Safety Officer
- Planning Section Chief
- Logistics Section Chief
- Branch Leader
- Triage Officer
- Treatment Officer
- Medical Transportation Officer

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MARCER

MCI

ICMS

ICS

Appendix—Mass Casualty Incident Checklists

--Medical Branch Leader

--Triage Officer

--Medical Transportation Officer

--Treatment Officer

Appendix—Triage Tag

Appendix—Mass Casualty Incident Caches of Supplies

Appendix D

Survey of MARCER Members

This survey focuses on the local or regional event occurring in Kansas City, Kansas. The goal is to identify resources that may be of assistance in the command and control of an event.

Please identify your agency: _____

Please identify the types of resources your agency may make available to us during an event:

<input type="checkbox"/> ALS ambulances	<input type="checkbox"/> BLS ambulances
<input type="checkbox"/> Medical Branch team	<input type="checkbox"/> Mass casualty supplies
<input type="checkbox"/> Rehab team/equipment	<input type="checkbox"/> Technical rescue medical team
<input type="checkbox"/> Mobile communications team	<input type="checkbox"/> EMTrack team/equipment

Some events may have multiple sites, such as a tornado strike or flood event. These events may require that Area Commands be utilized, each requiring its own Medical Branch structure. Does your agency have the capability to set-up and manage a Medical Branch outside of your jurisdiction? _____

How would our Communications Center obtain assistance from your agency (24 hour contact number)? _____

Some agencies give their Communications Center guidelines about how much mutual aid can be provided automatically. Some agencies require that the Chief or Director or Supervisor be contacted to make those decisions. What type of approval does your dispatcher have to get before sending resources? _____

How would our Communications Center or Medical Branch Leader communicate with your resources enroute to the scene (i.e. cell phone, Nextel direct connect, VHF radio, 800 radio, etc)? _____

If your resources sent to our city are going to be outside of their normal radio coverage, how do they keep their Communications Center updated on their status? _____

Some resources carry metropolitan map books. Others carry map books for only their jurisdiction. What assistance will your resources require from us to get to the scene? _____

Some resources may be equipped with 800 MHz portable radios to communicate with us on-scene. Other resources may require that we supply them with radios. What assistance will your resources require from us on-scene? _____

Some ambulances brought into the region may not be familiar with the location of hospitals in the metropolitan area. This will require that the Medical Transportation Officer have maps or directions available for the transport crews. Will your ambulances require routing assistance to hospitals in this area? _____

An event may require more transports than ambulances. Can your ambulances be sent back to a scene after they transport or do you expect them to return home once a transport is complete? _____

Some medical protocols rely heavily on the on-line medical control for orders. Others specify that the medics may operate by standing orders when they cannot reach medical control. Do your local medical protocols contain any specific instructions for crews when they may not have their normal medical control? _____

Hospitals may set up alternative care facilities to receive patients during an event. Some medical protocols specify that ambulances can only transport to emergency rooms from emergency scenes. Can your crews transport to alternative care facilities if those are set up as part of the event? _____

Local agencies are faced with the choice of committing all their resources to an event and relying on mutual aid to cover their city versus saving some local resources for city coverage and committing the mutual aid resources to the event. Can your ambulances provide coverage in Kansas City, Kansas or do you prefer they be used at the event? _____

Contact name, rank/title and phone number for the person completing Part I of the survey: _____

Appendix E

Results of the MARCER Survey

Sixteen responses were received to the survey distributed via email to all MARCER member agencies. The number of positive responses to each component was tabulated and organized in the table below.

Resource	“Yes” answers
ALS ambulances	13
BLS ambulances	2
Medical Branch team	2
Mass casualty supplies	7
Rehab team/equipment	2
Technical rescue medical team	1
Mobile communications team	2
EMTrack team/equipment	4
Able to manage a Medical Branch outside your jurisdiction	6
Mutual aid sent automatically	10
Mutual aid sent with approval of chief officer	6
Need directions to scene	9
Have 800 MHz portable radios	4
Need 800 MHz portable radios	9
Need directions to hospitals	2
Ambulances able to be sent back to scene	11
Protocols on standing orders	12
Transport to alternative care facilities	13
Ambulances used for city coverage	10
Ambulances used for incident	13

Appendix F

Kansas City Kansas Fire Department



Mass Casualty Incident Operating Procedure

	Mass Casualty Incident Operating Procedure	
	Table of Contents	

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	Mass Casualty Incident Operating Procedure	Section 1
	Preface	Original

The Mass Casualty Incident (MCI) Operating Procedure, a component of the Kansas City, Kansas Fire Department's Policies and Procedures, is designed to provide guidance to emergency response personnel responding to a mass casualty incident. The goal is to provide assistance to the largest number of patients through incident management principles. Depending on the nature and scope of the incident, austere medical care principles may be implemented.

The incident command structure outlined in the department's Incident Command System procedure applies during these types of incidents. The Incident Commander holds the ultimate authority and responsibility for all decisions made related to the incident. As it is impossible to plan for every eventuality in an MCI, this procedure represents the blueprint for MCI management. The Incident Commander and supporting command staff will implement the procedure to the degree necessary to manage the incident.

MCI management resembles single-patient emergency calls in that the department performs all of the tasks outlined in the command structure each time a patient is encountered. The command structure outlined merely provides a way to break down tasks into smaller, more manageable tasks to facilitate rendering the same care to many patients. In each encounter, the department's goal is to render the greatest good to the greatest number of patients.

	Mass Casualty Incident Operating Procedure	Section 2
	Goals and Objectives	Original

The goal of this procedure is to provide victims of mass casualty incidents with rapid medical assistance in an effort to minimize the loss of life, disabling injuries and human suffering.

The objectives of this procedure are to cover the on-scene medical management, transportation and documentation of casualties. This procedure is based on the resources and capabilities of the Kansas City, Kansas Fire Department. In addition, the resources and capabilities of mutual aid departments are covered in this procedure. This plan incorporates and integrates with the Regional Mass Casualty Incident Plan drafted by the Mid-America Regional Council Emergency Response Committee. This procedure will integrate with mutual aid plans for the State of Kansas as they are developed. This procedure utilizes the principles of the Incident Command System and is compliant with the National Incident Management System.

This procedure incorporates education through training requirements and exercise goals. This plan includes procedures for post-incident and post-exercise review and critique. Finally, this plan shall be reviewed annually by the department and undergo a detailed revision every three years or as critical needs are identified.

For the purposes of this procedure, a mass casualty incident is defined as an incident with four or more patients requiring ALS assessment, treatment and ambulance transportation.

This procedure is designed to be compliant with the National Incident Management System Incident Command Structure. Every effort has been made to remain consistent with departmental incident command plans, the regional MCI plan published by MARCER, and the regional EMS System Policies and Procedures published by MARCER.

	Mass Casualty Incident Operating Procedure	Section 3
	Risk Assessment	Original

Wyandotte County Emergency Management's Local Emergency Operations Plan includes a hazard analysis of the county, including several that could generate multiple patients. High hazard events include a hazardous materials incident and severe weather-related infrastructure failures, including failures due to thunderstorms, tornados, flooding, winter storms, and extreme temperatures. Moderate hazards include pipeline emergencies, fire, railway emergencies, radiological incidents, highway/street incidents, and communications failures.

	Mass Casualty Incident Operating Procedure	Section 4
	Incident Organization	Original

The incident is to be organized according to the department’s incident command system policy. The Mass Casualty Incident Operating Procedure specifically denotes the operations of the Medical Branch and the integration of regional resources into the goals and objectives of the Medical Branch.

Medical Branch Positions and Succession Plan

- Medical Branch Director—initially integrated into the duties and responsibilities of the Incident Commander. The duties are assumed by the EMS Director upon assignment from the Incident Commander. In the absence of the EMS Director, the Medical Transport Director will assume this role. In the absence of the Medical Transport Director, the EMS Supervisor will assume this role.
- Triage Officer—initially assumed by the highest qualified medical person on the first arriving apparatus or ambulance, other than the Incident Commander. This position may be delegated to a suppression paramedic upon their arrival if the duties were first assumed by an EMT. Personnel to assist with triage and the movement of patients will be assigned by the Incident Commander as they become available. A Morgue Manager may be appointed as needed.
- Treatment Officer—initially assumed by the highest qualified medical person on the second arriving apparatus or ambulance. This position may be transferred to the EMS Training Section Chief upon their arrival. Personnel to assist with treatment will be assigned by the Incident Commander as they become available. Immediate, Delayed, and Minor Treatment Area Managers may be appointed as needed.
- Transportation Officer—initially assumed by an EMT on the first arriving ambulance. This position may be transferred to the Medical Transportation Director upon arrival. In the absence of the Medical Transportation Director, the EMS Supervisor will assume this role. Personnel to assist with ambulance loading will be assigned by the Incident Commander as they become available. An Ambulance Staging Officer and a Medical Communications Officer may be appointed as needed.
- Medical Supply Officer—initially assumed by the Medical Branch Director. In a large or sustained incident, this position will be delegated to the Logistics Branch.

Command or management personnel from other agencies may be utilized to fill the above roles as necessary to accomplish the goals of the procedure and free as many treatment and transport crews as possible.

	Mass Casualty Incident Operating Procedure	Section 5
	Notifications	Original

MCI = an incident with four or more patients requiring ALS assessment, treatment and ambulance transportation.

1. Early Alert—if dispatch information reasonably leads to the belief that an MCI exists prior to confirmation by a fire department unit, dispatch will make the following notifications:
 - a. Responding units
 - b. EMS Supervisor (C-41)
 - c. Medical Transport Director (C-40)
 - d. EMS Director (C-34)
 - e. Deputy Chief (C-31)
 - f. Chief (C-30)
 - g. Training Chief (C-45)
 - h. EMS Training Chief (C-66)

2. Declaration—when a fire department unit determines that an MCI exists, the Incident Commander will declare a Mass Casualty Incident by informing dispatch of the following information:

MCI Level	# of Patients
1	4-10
2	11-25
3	>25

 - a. Number of estimated patients
 - b. Nature (mechanism of injury)
 - c. Hazards present
 - d. MCI Level
 - e. Request for additional resources
 - f. Ambulance staging location

3. De-activation—when all patients have left the scene, the Incident Commander will inform dispatch. The Medical Communications person will inform the hospitals and clear the MARCER Tactical Talk Group. Dispatch will notify Johnson County Emergency Communications and request an update be sent out on EMSsystem.

	Mass Casualty Incident Operating Procedure	Section 6
	MCI Response	Original

Upon declaration, dispatch will perform the following actions:

1. Acknowledge receipt of the information from Incident Command by repeating the information given. Obtain acknowledgement from any units still enroute to the scene.
2. Dispatch the requested resources. At a minimum, dispatch is to add one suppression company, preferably ALS, for every three ambulances ordered to the scene. If the Incident Commander requests more suppression companies, that shall override this directive.
3. Start a MCI Report-Dispatch form to document all actions taken.
4. Relay the information provided by the Incident Commander to:
 - a. EMS Supervisor (C-41)
 - b. Medical Transport Director (C-40)
 - c. EMS Director (C-34)
 - d. Deputy Chief (C-31)
 - e. Chief (C-30)
 - f. Training Chief (C-45)
 - g. EMS Training Chief (C-66)
5. [KCKFD will develop trigger levels at which EMS training staff and other command staff are notified.]
6. Notify Johnson County Emergency Communications (913-432-2121) and request activation of the EMSsystem hospital alert. Provide them with the following information:
 - a. Location of the incident
 - b. Nature of the incident
 - c. MCI Level
 - d. Number of estimated casualties

	Mass Casualty Incident Operating Procedure	Section 7
	Mutual Aid Preplans	Original

1. Ambulances
 - a. The Medical Branch Director will advise Incident Command of the number of ambulances needed.
 - b. Incident Command will request ambulances through dispatch and provide the following information:
 - i. Location of the Incident Command Post.
 - ii. Location of the staging area where ambulances should report.
 - c. Ambulances shall report to the staging area for assignment. Crews are to remain with their ambulance unless otherwise instructed by an appropriate authority.
 - d. Dispatch will request that a poll of available ambulance resources be done through Johnson County Emergency Communications (913-432-2121). Dispatch will use that information to contact agencies and request ambulances to respond. Dispatch will use the matrix in Appendix A and on the back of the MCI Report-Dispatch when contacting area EMS agencies.
 - e. Dispatch will keep Incident Command informed of which agencies are sending resources. Incident Command will keep the Medical Branch Director updated on this information.
2. Medical Command Personnel
 - a. The Medical Branch Director will advise Incident Command of the number and levels of personnel needed in addition to those responding on ambulances.
 - b. Incident command will request personnel through dispatch and provide the following information:
 - i. Location of the Incident Command Post
 - ii. Location of the staging area where the personnel should report.
 - c. All personnel shall report to the staging area for assignment. When possible, personnel should arrive in department vehicles.
3. Equipment
 - a. Incoming ambulances shall be directed to drop off necessary equipment at the established supply area.
 - b. Medical supply trailers are available throughout the region. Each trailer is equipped with enough supplies for 50-100 patients. The Medical Branch Director will advise Incident Command of the need for an MCI trailer.
 - c. Incident Command will request the number of MCI trailers needed through dispatch and provide the following information:
 - i. Location of the Incident Command Post
 - ii. Location of the staging area where the MCI trailers should report.

- d. Dispatch will request MCI trailers through Johnson County Emergency Communications (913-432-2121).
- e. Johnson County Emergency Communications will locate and dispatch the requested trailers and notify the Incident Commander through dispatch of the resources enroute.
- f. MCI trailers shall report to the staging area for assignment.

	Mass Casualty Incident Operating Procedure	Section 8
	Personnel Functions	Original

Incident Command

The first-in apparatus officer must perform these actions quickly:

1. Give dispatch a size-up of the scene
 - a. Number of estimated patients
 - b. Nature (mechanism of injury)
 - c. Hazards present
 - d. MCI Level
 - e. Request for additional resources
2. Assign a Triage Officer
3. Determine the fire apparatus and the ambulance staging areas and relay to dispatch and incoming units.
4. Access tactical worksheet and begin tasks

As personnel arrive, the Incident Commander must assign the following positions at minimum:

1. Treatment Officer
 - a. Command will assign support personnel for each treatment area (red, yellow, green) established.
 - b. Red patients should have 1 paramedic and 1 EMT each if possible.
 - c. Yellow patients should have 1 paramedic and 1 EMT each if possible.
 - d. Green patients should have 2 EMTs for a group of patients.
2. Transportation Officer
3. Medical Communications Officer

As incidents escalate, consider adding these positions:

1. Medical Supply Officer
2. Ambulance Staging Officer
3. Morgue Manager
4. Treatment Area Managers
5. Communications Aide to the Incident Commander
6. Assistants for each officer position

Medical Branch

1. Oversee establishment of the triage, treatment and transportation groups.
2. Provide EMS specific scene reports to the hospitals and dispatch.
3. Obtain radio frequencies according to plan and incident needs.

4. Designate the approach route, staging area, equipment stockpile area, loading area, and provide this information to the responding ambulances.
5. Consider the need for a survivor reception area.

Triage Group

1. Direct all ambulatory patients to an area where they can be evaluated (Green).
2. Perform primary triage and tie color tape to patient's right wrist(primary) or right ankle (secondary).
3. Move, with the assistance of assigned litter bearers, patients to the entrance to the treatment area.
4. Delegate patient care assignments for patients that cannot be moved until they are extricated.
5. Insure that the entire area is searched for victims who may have wandered away from the scene or been blown off the scene.
6. If necessary, establish a morgue in a secure area for placement of deceased patients that must be moved to access other patients or who expire after movement.
7. If available and the condition of the patients warrant, incorporate physicians into the care of patients awaiting extrication.

Treatment Group

1. Locate and set up a treatment area away from the immediate action. Treatment area must be large enough to accommodate all patients and medical personnel.
2. Obtain colored tarps or flags or light sticks to mark areas.
3. Treatment area should have a definite entrance and exit.
4. Re-triage and apply a triage tag to all patients entering the treatment area. Scan triage tag into the system if a scanner is available. Retain torn off triage tag parts for later inventory.
5. Delegate patient care assignments for patients in the treatment area.
6. First arriving patients should be placed near the exit of the respective treatment area.
7. Request lighting through the Medical Branch Director/Incident Commander if needed.
8. Consider using police officers in the treatment area to maintain order.
9. Incorporate physicians and nurses into the treatment area if available.

Transportation Group

1. Establish the ambulance staging and loading areas early.
2. Obtain a radio talk group for communications from the scene to the hospitals.
3. Inform the hospitals of the incident type, location, estimate of the total number of patients, and an estimate of the total number of patients by triage category.
4. Determine hospital availability and capability.

5. Coordinate the distribution of patients to appropriate facilities. Attempt to transport family members to the same facility.
6. Track patients leaving the scene either by scanner or by maintaining a list of names, triage tag numbers, unit transporting, and their destination.
7. Provide directions to facilities if needed.
8. Consider requesting an Ambulance Staging Coordinator and a Medical Communications Officer from Incident Command.
9. Move, with the assistance of assigned litter bearers, patients to the loading area.
10. As patients leave the scene, inform the hospitals, giving their estimated time of arrival and basic patient information.
11. Identify routes for arriving units to use, an equipment stockpile area, and an egress route.
12. Keep crews with transport ambulances. Use litter bearers to move patients to the ambulances.
13. Orient the patient loading area to avoid having the ambulance back up after the patient is loaded.
14. Request that ambulances be sent back to the scene if needed.
15. Assign medical personnel to buses to facilitate transport of minor injuries to more distant hospitals.

Extrication Group

1. Rescue inaccessible patients.
2. Utilize appropriate safety equipment for all personnel in this area.
3. Coordinate with Triage to provide patient care until the patient can be moved.
4. Access patients in order of severity unless less-severely injured patients must be moved to gain access.

Medical Supply Group

1. Collect and organize medical equipment.
2. Relocate pre-positioned medical equipment to the incident.
3. Inform arriving ambulances of the medical equipment needs and the location of the equipment stockpile area.

Communications

1. All communications should be calm, orderly, and clear-text.
2. One radio talk group should be used for command and the branches.
3. Limit radio traffic to the minimum necessary information. Use face-to-face communication or runners when possible.
4. Make arrangements for portable radios and batteries.
5. Make remote headsets or speaker microphones available.
6. Have a portable megaphone available.
7. If using a cellular phone, maintain the connection.
8. Obtain an after-action review of all MCIs.

The following Personnel Function descriptions are taken from the MARCER Regional MCI plan. A review of these descriptions is to be done in conjunction with MARCER.

- Medical Branch Leader
- Triage Officer
- Treatment Officer
- Transportation Officer

The following Personnel Function descriptions are to be developed in conjunction with the MARCER Regional MCI plan.

- *Medical Communications Officer*
- *Medical Supply Officer*
- *Ambulance Staging Officer*
- *Morgue Manager*
- *Immediate Treatment Area Manager*
- *Delayed Treatment Area Manager*
- *Minor Treatment Area Manager*

MEDICAL BRANCH LEADER

Responsible for overall EMS operations an at incident, for appointing all other EMS team members and forwarding all EMS recommendations to the Incident Commander

- Assume assignment as Medical Branch Leader from Incident Commander
- Identify yourself as Medical by wearing vest
- Perform a medical size-up and relay information to Command
 - Assess need for decontamination of patients prior to treatment or transport
- Develop an initial strategy for the medical aspects of the incident, including
 - Contact appropriate EMCC and request the issuance of an MCI Alert (refer to the *EMSystem Protocols and Policies Manual* for instructions)
 - Options for making contact include:
 - Ask agency's dispatch center to make contact
 - Use wireless phone
 - Establish a medical staging area and notify Command
- Order additional medical resources needed through Command to include
 - ALS Units/BLS Units
 - Mass Casualty Unit (Trailer, Van)
 - Buses
 - Helicopters
 - Assistant to track resources being dispatched to the scene
- Appoint a Triage Officer, if not established
- Appoint a Treatment Officer
- Appoint a Transport Officer
- Ensure the Triage, Treatment and Transport Officers are utilizing the web based patient tracking system
- Communicate regular updates to Command on medical branch operations
- Communicate back to the appropriate EMCC with ongoing information on the status of the incident

TRIAGE OFFICER

Responsible for the management of victims where they are found at the incident site, and for sorting and moving victims to the treatment area. The officer shall ensure coordination between extrication teams and patient care personnel to provide appropriate care for entrapped victims. Reports to Medical Branch Leader.

- Assume position as Triage Officer and identify yourself by wearing vest
- Observe scene for hazards and take necessary precautions
- Confer with Safety Officer
- Determine the location, number and condition of patients involved in the incident
- Advise Medical Branch Leader of the approximate number and severity of injuries

DO NOT PROCEED UNTIL THE ABOVE TASKS ARE DONE

- Establish a strategy for triage with the Medical Branch Leader, including
 - Triage patients where they are found OR
 - Move patients to a designated area for triage
- Assign personnel to direct walking wounded to triage area
- Use or assign a member of the Triage Group to utilize the electronic patient tracking system to capture the triage tag numbers and patient status
- Determine and order any additional resources through Medical Branch Leader, including
 - Additional personnel
 - Additional equipment or supplies
- Assign and control all personnel in the triage group to include
 - Establish triage teams and define operating zones
 - Make sure that sufficient quantities of triage tags are available
- Coordinate the moving of patients to the treatment group in order of severity
- Communicate with other medical branches as needed by
 - Radio
 - Wireless phone
 - Face to face communications
- Provide regular updated progress reports to Medical Branch Leader
- Advise “All Clear” to Medical Branch Leader when all patients have been triaged and moved to the treatment group
- Assess need for decontamination of patients prior to treatment or transport

MEDICAL TRANSPORTATION OFFICER

Responsible for arranging appropriate transport vehicles (ambulances, helicopters, buses, vans, etc.) for those patients that the Treatment Officer has selected for transport

- Assume position as Transportation Officer upon assignment by Medical Branch Leader and identify yourself by wearing vest
- Determine the location for the staging of the transportation of patients
- Determine and order any additional resources through Medical Branch Leader, including
 - Personnel
 - Ambulances
 - Helicopters
 - Buses
- Communicate with the appropriate EMCC to determine hospital availability and capacities
- Appoint a Medical Staging Officer to control ambulance flow
- Designate a person to track all green triaged patients that are or are not transported
- Coordinate patient removal to loading zones in order of severity to include moving patients to helicopter landing zone sector for transport to distant hospitals
- Maintain accurate records of patients transported on the tracking boards or sheets
- Communicate with other medical branches as needed by
 - Radio
 - Wireless phone
 - Face to face communications
- Utilize the portable patient tracking system device to record the mode of transportation, carrier information and destination
- Provide regular updated progress reports to Medical Branch Leader
- Advise “All Clear” to Medical Branch Leader when all patients have been transported

TREATMENT OFFICER

Responsible for sorting patients at the treatment area to establish priorities for treatment and transport, and for directing coordination with medical professionals mobilized to the scene. The treatment area should be headed by an individual who routinely functions in pre-hospital EMS, or a previously identified individual who is designated by position, and participates in pre-hospital mass casualty drills. If at all possible, this person should be a physician or the highest ALS available. Reports to the Medical Branch Leader.

- Assume position as Treatment Officer upon assignment by Medical Branch Leader and identify yourself by wearing vest
- Determine the location for the field treatment area and notify the Medical Branch Leader
- Determine and order any additional resources through Medical Branch Leader, including
 - Additional personnel, including the need for on-site physician
 - Mass casualty trailer/van
- Construct a formal treatment area to include
 - Identifiable entrance and exit points by using stakes and barrier tape
 - Separate red and yellow triaged patients within the treatment area
 - Develop a pool of medical supplies within the treatment area from mass casualty unit and non-transporting units
 - Designate an area for green triaged patients to be collected and treated outside the formal treatment area
- Use or assign personnel in the Treatment Group to use the portable patient tracking device to record detailed information including the patient's name and information as time permits
- Locate yourself at the entrance point and perform re-triage as needed on patients arriving from the triage group
- Perform triage on patients arriving into the treatment area without triage tags
- Assign and control all personnel in the sector to ensure appropriate treatment for all patients
- Move patients through the exit point into the transportation group in order of severity
- Communicate with other medical branches as needed by
 - Radio
 - Wireless phone
 - Face to face communications
- Provide regular updated progress reports to Medical Branch Leader
- Advise "All Clear" to Medical Branch Leader when all patients have been treated and moved to the transport group

	Mass Casualty Incident Operating Procedure	Section 9
	Operational Principles	Original

General Principles

1. Use cones, tape or lengths of fire hose to direct patient flows and limit access.
2. Use colored lights to mark the scene at night [KCKFD to purchase lights].
3. Use color-coded position vests to make rapid identification possible [KCKFD and MARCER to develop color and terminology conventions].

	Mass Casualty Incident Operating Procedure	Section 9
	Medical Reports	Original

Documentation of Medical Care

In an incident with 20 or fewer patients, a patient care report (PCR) will be completed for all patients, including those deceased on the scene. If a patient is transported by a mutual aid provider, the department will request a copy of their PCR for the incident file.

In an incident with more than 20 patients, triage tags will be acceptable as the only field documentation of care, including those deceased on the scene. Triage tags will stay with the patient. Crews transporting patients to the hospital will request a copy of the triage tag to be turned in to the EMS office upon conclusion of the incident. If a patient is transported by a mutual aid provider, the department will request a copy of their triage tag(s) for the incident file.

	Mass Casualty Incident Operating Procedure	Section 9
	Communications	Original

The following talk groups will be utilized as indicated:

- KCKFD Tactical Talk Group—on-scene communications between the Incident Commander, dispatch, and officers.
- MARCER Tactical Talk Group—communications between the scene and receiving hospitals. Johnson County Emergency Communications is to be contacted on the MARCER dispatch channel for tactical channel assignment and connection with the hospital talk groups. MARCER channels are available in the second or “B” position on the portable radios and are preceded by an “E” or “M”.
- KCKFD EMS Talk Group—communications between staging and transport, if necessary. A MARCER Tactical Talk Group may also be utilized for this purpose if a large contingent of mutual aid ambulances are responding.

If the MARCER radio system is not available on-scene due to poor coverage or radio problems, the Medical Communications Officer will establish communication with Johnson County Emergency Communications (913-362-7440) via cellular or wired phone. Depending on the issue with the radio, Johnson County may be able to patch the phone into the radio system. If communications is established via phone, do not break the connection until the incident is deactivated.

Johnson County can also notify the hospitals via the HEAR radio system in the event of a phone system or radio system failure.

Draft communications policy for utilizing hospital communications system and mutual aid communications system. This section to be developed in conjunction with MARCER..

	Mass Casualty Incident Operating Procedure	Section 6
	Position Forms and Reports	Original

The following forms are to be developed in conjunction with MARCER and utilized as part of the Medical Operations.

- Incident Command Tactical Worksheet*
- Multi-Casualty Branch Worksheet*
- Multi-Casualty Recorder Worksheet*
- Multi-Casualty Hospital Resource Availability*
- Multi-Casualty Ambulance Resource Status*

	Mass Casualty Incident Operating Procedure	Section 12
	Plan Evaluation	Original

Evaluation

Every declared MCI and every MCI exercise should be evaluated upon its conclusion. A post-incident analysis should include:

- Incident chronology summary
- Inventory of units involved and assignments
- Review of communications
- Review of ICS functionality
- Integration of mutual aid, if used
- Summary of patient information
- Recommendations for improvements

Procedure Review

This procedure should be reviewed annually after adoption. Changes should be made as needed and disseminated to department personnel.

Training

This procedure is to be incorporated into the EMS training curriculum. An exercise should be conducted annually.

	Mass Casualty Incident Operating Procedure	Appendix A
	MCI Report-Dispatch	Original

The following form shall be utilized by dispatch any time the conditions for an MCI are met, even if an MCI is not declared by the Incident Commander. The completed form is to be faxed to the EMS Director at the conclusion of the incident.

MCI Report-Dispatch

Location of Incident: _____ Dispatch Time: _____

Number of estimated patients: _____ MCI Level: _____

Type of Incident: _____ (e.g. bus accident)

Hazards Present (if any): _____

Resources Requested: _____ Incident Commander: _____

Ambulance Staging: Location: _____ Command Post: _____

[KCKFD to determine if there will be automatic dispatch of resources based on the MCI level.]

<u>Notification</u> (indicate the time paged & acknowledged)	<u>Paged/called</u>	<u>Acknowledged</u>
Chief DeKeyser	_____	_____
Deputy Chief Rocha	_____	_____
EMS Director Alexander	_____	_____
Medical Transport Director Shost	_____	_____
Training Chief Simonich	_____	_____
EMS Training Chief Zeeb	_____	_____

Notify Johnson County Emergency Communications (913-432-2121) and request activation of the EMSsystem hospital alert. Provide them with the location of the incident, the nature of the incident, the MCI level, and the number of estimated casualties.

Notify Johnson County Emergency Communications (913-432-2121) when the last patient has left the scene and request a de-activation notice be broadcast on EMSsystem.

Ambulances

Incident West of I-435

Bonner Springs EMS n/a
 Leavenworth County EMS
 Johnson County Med-Act 913-432-2121
 AMR 913-262-8999
 MAST
 North Kansas City, Fire 816-274-6010
 NRAD
 Lawrence-Douglas County 785-843-0250

Req # Sent

Incident between I-435 and I-635

Johnson County Med-Act 913-432-2121
 AMR 913-262-8999
 MAST
 Bonner Springs EMS n/a
 North Kansas City Fire 816-274-6010
 NRAD
 Leavenworth County EMS
 Lawrence-Douglas County 785-843-0250

Incident east of I-635

Johnson County Med-Act 913-432-2121
 AMR 913-262-8999
 MAST
 North Kansas City Fire 816-274-6010
 Bonner Springs EMS n/a
 NRAD
 Leavenworth County EMS
 Lawrence-Douglas County 785-843-0250

Other Resources

MCI Supply Trailers

Johnson County Med-Act 913-432-2121
 MAST
 NRAD
 Central Jackson County

Medical Technical Rescue Team

Johnson County Med-Act

Medical Branch Team

Johnson County Med-Act
 MAST

Rehab team/equipment

Mobile Communications Team

WYCO Emerg. Management n/a
 JOCO Emerg. Comm. 913-432-2121
 Kansas City Fire

EMTrack Team/Equipment

Bonner Springs EMS n/a
 Johnson County Med-Act 913-432-2121
 Leavenworth County EMS
 MAST

	Mass Casualty Incident Operating Procedure	Appendix B
	MCI Report-Medical Branch	Original

Draft MCI report for the Medical Branch Director—this section to be developed.

Patient classifications under START

Red/Immediate—Respirations greater than 30/minute, capillary refill greater than 2 seconds, unconscious, or unable to follow simple commands. These patients have first priority. A rapid assessment and medical intervention is required for survival.

Yellow/Delayed—Respirations under 30/minute, capillary refill less than 2 seconds, and able to follow simple commands. These patients have second priority. Injuries are less severe or are not an immediate threat to life.

Green/Minor—Patients requiring only simple medical care. These patients have third priority.

Black/Deceased/Expected to Die—Patients with injuries incompatible with life. Patients unable to maintain their own airway with positioning. Patients in cardiac arrest. These patients have fourth priority. Will not be moved from the position found unless necessary to access other patients. Will not be transported from the scene. If necessary to move them or if they expire prior to leaving the scene, place them in the morgue area and protect their privacy.

	Mass Casualty Incident Operating Procedure	Appendix D
	Hospital Locator	Original

Draft listing of hospitals and directions to same—this section to be developed.

	Mass Casualty Incident Operating Procedure	Appendix E
	Hospital Capacity Information	Original

Hospital Name	Phone Number	ER Capacity
<u>Kansas City, Kansas</u>		
KU Medical Center		
Providence Medical Center		
<u>Johnson County, Kansas</u>		
Menorah Medical Center		
Olathe Medical Center		
Overland Park Regional Medical Center		
Shawnee Mission Medical Center		
St. Luke’s South Hospital		
<u>Leavenworth County, Kansas</u>		
Cushing’s Hospital		
St. John’s Hospital		
Leavenworth VA Hospital		
<u>Douglas County, Kansas</u>		
Lawrence Memorial Hospital		
<u>Missouri Hospitals</u>		
Children’s Mercy Hospital		
St. Luke’s Hospital		
St. Luke’s North Hospital		
St. Luke’s East Hospital		
Truman Medical Center West		
Truman Medical Center East		
North Kansas City Hospital		
Liberty Hospital		
Independence Regional Medical Center		
Medical Center of Independence		
St Mary’s Hospital		
Lee’s Summit Hospital		
Research Hospital		
Research Belton Hospital		
St. Joseph’s Health Center		
Kansas City VA Hospital		

	Mass Casualty Incident Operating Procedure	Appendix F
	MCI Visor Card	Original

Draft card to be kept in the apparatus visor and in clipboards, outlining the initial actions to take and the triage algorithm—this section to be developed.