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Standard Guide for Planning for and Response to a Multiple Casualty Incident¹

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1. Scope

1.1 This guide covers the planning, needs assessment, training, integration, coordination, mutual aid, implementation, provision of resources, and evaluation of the response of a local emergency medical service (EMS) organization or agency to a multiple patient producing situation that may or may not involve property loss. This guide is limited to the pre-hospital response and mitigation of an incident up to and including the disposition of patients from the incident scene.

1.2 This guide addresses the background on planning, scope, structure, application, federal, state, local, voluntary, and nongovernmental resources and planning efforts involved in developing, implementing, and evaluating an EMS annex, or component, to the local jurisdiction's emergency operations plan (EOP) as defined in the Federal Emergency Management Agency (FEMA) publication, Civil Preparedness Guide (CPG) 1–8.²

1.3 *This standard does not purport to address the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

F 1149 Practice for Qualifications, Responsibilities, and Authority of Individuals and Institutions Providing Medical Direction of Emergency Medical Services³

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *command post*—the physical location from which incident command exercises direction over the entire incident.

3.1.2 *disaster*—a sudden calamity, with or without casualties, so defined by local, county, or state guidelines.

3.1.2.1 *medical disaster*—a type of significant medical incident which exceeds, or overwhelms, or both, the capability of

local resources and of routinely available regional or multi-jurisdictional medical mutual aid, and for which extraordinary medical aid from state or federal resources is very likely required for further diagnosis and treatment.

3.1.3 *EMS control/medical group supervision*—the first emergency medical services response at the incident scene, or designated by the local response plan or incident command to be responsible for the overall management of the incident's EMS operation.

3.1.4 *extrication management*—the function of supervising personnel who remove entrapped victims.

3.1.5 *fatality management*—the function designated by existing plans, or the EMS control/medical group supervisor, to organize, coordinate, manage, and direct morgue services.

3.1.6 *incident commander*—the individual responsible for the overall on-site management and coordination of personnel and resources involved in the incident.

3.1.7 *logistics resources management*—the function responsible for acquiring personnel, equipment (including vehicles), facilities, supplies, and services as requested by the incident commander.

3.1.8 *medical communications management*—the function designated by the incident commander or EMS control/medical group supervisor to establish, maintain, and coordinate effective communication between on-site and off-site medical personnel and facilities.

3.1.9 *medical supplies management*—the function designated by the incident commander to manage equipment and report to EMS control/medical group supervisor.

3.1.10 *mental health coordinator*—a qualified mental health professional responsible for coordinating the psychosocial assessments and interventions for responders, affected individuals, and groups.

3.1.11 *multiple casualty incident (MCI)*—a type of significant medical incident that may fall into the following categories:

3.1.11.1 *extended*—an incident for which local medical resources are available and adequate to provide for field medical triage and stabilization, and for which appropriate local facilities are available and adequate for further diagnosis and treatment.

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² Available from FEMA, P.O. Box 70274, Washington, DC 20024.

³ *Annual Book of ASTM Standards*, Vol 13.02.

3.1.11.2 *major*—an incident producing large numbers of casualties, for which routinely available regional or multi-jurisdictional medical mutual aid is necessary and adequate for further diagnosis and treatment.

3.1.12 *mutual aid*—the coordination of resources, including but not limited to facilities, personnel, vehicles, equipment, and services, pursuant to an agreement between jurisdictions providing for such interchange on a reciprocal basis in responding to a disaster or emergency.

3.1.13 *needs assessment*—a preliminary survey of real or potential hazards in a specific geographic area.

3.1.14 *operations officer*—individual who assists the incident commander on issues relating to the operations of the incident.

3.1.15 *public information*—a function designated by the incident commander for the dissemination of factual and timely reports to the news media.

3.1.16 *safety management*—the function that identifies real or potential hazards, unsafe environment or procedures at the incident scene, and recommends the appropriate corrective or preventive actions under the authority of the incident commander, to ensure the safety of all personnel at the incident scene.

3.1.17 *sector officers (group supervisors/leaders/managers)*—qualified personnel who control a specific area or task assignment.

3.1.18 *staging area*—the location where responding emergency services equipment and personnel assemble for assignment.

3.1.19 *staging management*—the function designated by the incident commander that is responsible for the orderly assembly and utilization of resources in a designated area.

3.1.20 *transportation management*—the function designated by the EMS control/medical group supervisor that is responsible for the transportation of the patients from the incident scene and for coordination with EMS control/ medical group supervisor, communications, and the incident commander.

3.1.21 *treatment area*—the site at or near the incident for emergency medical treatment prior to transport.

3.1.22 *treatment management*—the function that is responsible for the definitive on-scene medical treatment of patients.

3.1.23 *triage*—the process of sorting and prioritizing emergency medical care of the sick and injured on the basis of urgency and type of condition present, and the number of patients and resources available in order to properly treat and transport them to medical facilities appropriately situated and equipped for their care.

3.1.24 *triage area*—a location near the incident site to which injured persons should be brought, triaged, and taken directly to the treatment area.

3.1.25 *triage management*—the function that is responsible for triage and preliminary treatment of casualties.

4. Summary of Guide

4.1 This guide is based upon a body of knowledge on the planning, implementation, and evaluation of the emergency medical components of the local pre-hospital response to multiple casualty incidents.

4.2 The body of knowledge on which the guide is based was drawn from a wide variety of sources, including individual authors, academic institutions, and federal, state, regional, and local organizations.

4.3 This guide is organized in such a way as to provide those responsible for planning, implementing, and evaluating the emergency medical components of the local pre-hospital response to multiple casualty incidents with information they can readily use to ensure that their response is as expedient and appropriate as is reasonably possible.

4.4 The guide was created to organize, collate, and distribute related information in such a way as to be readily accessible to people in the fields of emergency medical services and emergency management.

4.5 This guide should not be perceived as an inflexible rule or standard but as a guide that should be adapted to the needs of the individual community, and should be refined and improved as the body of knowledge on which it is based increases.

5. Significance and Use

5.1 This guide is intended to assist the management of the local EMS agencies or organizations in the design, planning, and response of their jurisdiction's resources to multiple casualty incidents (MCIs).

5.2 This guide does not address all of the necessary planning and response of pre-hospital care agencies to an incident that involves the total destruction of community services and systems.

5.3 This guide does not address the necessary design, planning, and response to be undertaken by a medical care facility to an internal or external event that necessitates the activation of the facility's disaster plan.

5.4 This guide provides procedures to coordinate and provide a systematic and standardized response by responsible parties, including the local elected officials, emergency management officials, public safety officials, medical care officials (pre-hospital and hospital), local EMS agencies/organizations and others with objectives and tasks for the pre-hospital management of a significant incident.


5.5 This guide provides for the establishment of an incident command system with position descriptions that identify mission, functions, and responsibilities of the command structure to be used at a MCI. The incident command functions include but are not limited to staging, logistics, rescue/extrication, triage, treatment, transportation (air, land, and water), communications, and fatality management.

5.6 This guide provides examples and other management tools that can assist in providing training objectives and decision making models for dispatch, response, triage, treatment, and transportation for local jurisdictions experiencing multiple casualty incidents.

PLANNING

6. Planning

6.1 *Purpose*—Planning should be a cooperative effort between local EMS providers and the jurisdiction in which they deliver services. The plan should be written to establish the

 **F 1288 – 90 (1998)**

emergency organization, basic policies, responsibilities, and actions required for support of local operations of emergency medical/health plans. Plans should ensure rapid medical assistance to persons requiring aid due to an incident. Plans should describe a system for coordination of alerting, dispatching, and uses of medical personnel and resources whenever a local emergency medical health agency requires assistance from another EMS agency/jurisdiction. The plan should be designed to be an extension of day to day service, facilities, and resources.

6.2 *Goal*—The plan ensures adequate and coordinated efforts that will minimize loss of life, disabling injuries, and human suffering by providing effective medical assistance through efficient use of medical and other resources in the event of emergencies resulting in multiple casualty incidents.

6.3 *Objectives*—The primary objectives of a plan should include a process whereby:

6.3.1 Each EMS agency/jurisdiction should have a plan to meet its own needs within its capabilities.

6.3.2 Each EMS agency/jurisdiction should enter into mutual aid agreements with other local or regional jurisdictions which can be invoked when local capability to manage a situation has been exceeded. Each jurisdictional plan should facilitate the access and utilization of local and state resources.

6.3.3 The EMS agency/jurisdiction's plan should conform to appropriate regional and state plans.

6.3.4 Each EMS agency/jurisdiction should define training requirements, and develop and utilize a training program based on the needs assessment of the community.

6.3.5 The plan should be a coordinated interagency effort. Responsible agencies should have regular interaction in order to facilitate working relations during an incident.

6.3.6 Plans and procedures should be reviewed and revised regularly on the basis of tabletop exercises, simulated incidents, or actual events.

6.4 *Needs Assessment and Hazards Analysis:*

6.4.1 A needs assessment is a preliminary survey of real or potential hazards in a specific geographic area. Basic to the planning process is an understanding of the problems that should be anticipated in the specific area.

6.4.1.1 A needs assessment lets the EMS agency/jurisdiction know what to expect.

6.4.1.2 It prevents planning for unnecessary events.

6.4.1.3 It provides an incentive for the EMS agency/jurisdiction's plan.

6.4.1.4 It might indicate preventive measures.

6.4.1.5 It creates an awareness of new hazards.

6.4.2 When the needs assessment is complete, the jurisdiction should be able to make the following decisions:

6.4.2.1 The type of planning desired,

6.4.2.2 What types of response to emphasize,

6.4.2.3 What resources will be needed to fulfill that response, and

6.4.2.4 The type and quantity of mutual aid and support services that might be required outside the normal jurisdictional services.

6.4.3 *Components*—There are three basic parts to a needs assessment:

6.4.3.1 Consideration of the potential for specific incidents,
6.4.3.2 Evaluation of the potential harm resulting from the incident, and

6.4.3.3 Evaluation of the resources required to respond to the incident.

6.4.4 *Approach*—The following are suggested approaches to completing a needs assessment:

6.4.4.1 Form a team to identify the potential hazards, risks, and impact relating to potential MCIs.

6.4.4.2 Consult the local or state civil defense/emergency preparedness offices for assessment information.

6.4.4.3 After identifying potential MCIs, evaluate them for their potential hazards, risks, and impact.

6.4.4.4 Evaluate the area's resources.

6.4.5 *Resources Assessment*—Consider the personnel required for performing such tasks as emergency medical services, firefighting, and rescue. Inventory equipment for the job and evaluate its ability to perform the task. Prepare a written description of what potential incidents exist, and the ability to respond to these incidents.

6.4.6 Once complete, the needs assessment becomes part of the plan.

6.5 *Plan Components*— The plan should include provision for the following:

6.5.1 *Organizational Structure for Response:*

6.5.1.1 The plan should define an overall incident organization based on a strategy of efficient and effective utilization of resources.

6.5.1.2 The plan should address chain of command, including transfer of authority of any officer or position.

6.5.2 *Organization of Manpower and Resources for Response:*

6.5.2.1 The plan should provide for delineation of responsibilities and authority for all involved response personnel and agencies.

6.5.2.2 The plan should address necessary resources for each level of event and prepare for availability and updating of those resources.

6.5.3 *Response:*

6.5.3.1 The plan should provide for appropriate response to MCIs.

6.5.3.2 The plan should provide for organization and implementation of the following during MCIs:

(a) Incident command system,

(b) Patient triage, treatment, and transportation areas,

(c) Transportation dispatch and routing (ground, air, and water),

(d) Coordination with receiving hospitals (patient care capacity inventory (PCCI)),

(e) Medical teams,


(f) Communications plan,

(g) Psychosocial services,

(h) Medical records, and

(i) Resource inventory list of equipment, services, and personnel.

6.5.4 *Coordination*— Each EMS agency/jurisdiction should have plans and procedures that facilitate working with other response agencies during a MCI. Communications with these

 **F 1288 – 90 (1998)**

organizations should be established on a regular basis to ensure a more effective response. The EMS agency/jurisdiction should effectively interact with the following:

- 6.5.4.1 Hospitals, hospital consortia, skilled nursing facilities, poison control centers, and other specialty care centers,
- 6.5.4.2 Health department and mental health agencies,
- 6.5.4.3 Law enforcement agencies,
- 6.5.4.4 Fire services,
- 6.5.4.5 Other EMS agencies,
- 6.5.4.6 Local companies and businesses,
- 6.5.4.7 Local/regional EMS councils,
- 6.5.4.8 Media,
- 6.5.4.9 Emergency management offices of the local jurisdiction,
- 6.5.4.10 Local emergency planning committees (as defined by law for hazardous materials (HAZMAT) mitigation),
- 6.5.4.11 Specialty services such as CHEMTREC, HAZMAT teams (medical and mitigation), mine rescue teams, search teams, etc.,
- 6.5.4.12 Social service agencies such as the American Red Cross, Salvation Army, churches, and religious and community service groups,
- 6.5.4.13 City or county government,
- 6.5.4.14 Neighboring jurisdictions,
- 6.5.4.15 *State Government*—Procedures for obtaining assistance from state resources, including resources of the National Guard, and
- 6.5.4.16 *Federal Government*—Procedures for obtaining assistance from local installations of these agencies, including military resources, U.S. Weather Service, or National Park Service; and procedures for obtaining assistance through the state from federal agencies such as the Department of Health and Human Services or the Environmental Protection Agency.

6.6 *Legal Issues*—Ensure that the plan is in compliance with local, state, and federal laws and regulations.

6.7 *Psychosocial Services*—Arrangements for psychosocial services should be an integral part of the planning process. Efforts should be made to solicit involvement from professional clinicians who are experienced with medical systems. A coordinator should be assigned who participates as an active member of the area planning effort. This team should be organized, in place, and available as part of any community response effort. Further, this team should participate in all phases of the response, including planning and evaluation.

6.8 Mutual Aid

6.8.1 Planning Stage:

- 6.8.1.1 Define who will respond where and when, and what advanced life support procedures are authorized, etc.
- 6.8.1.2 Establish formal written agreements between jurisdictions to mitigate potential problems before they occur. Establish protocols for requesting aid and conditions for refusing to provide aid.
- 6.8.1.3 Update the equipment inventory and distribution of resources.

6.8.2 *Formal Agreement*—The written agreement should also include:

6.8.2.1 Objectives:

- (a) Definition of mutual aid,

- (b) Assignment of review date,
- (c) Amendments, and
- (d) Definitions used in plan.

6.8.2.2 Participation:

(a) Extent and limit of participation: emergency agencies, adjacent counties and cities, state agencies, and out of state jurisdictions,

- (b) Point of contact,
- (c) Request for mutual aid,
- (d) Obligations of the plan,
- (e) Conditions for refusing to provide aid, and
- (f) Withdrawal from plan.

6.8.2.3 Organization:

- (a) Local organization chart,
- (b) Extent of authority of person initiating plan,
- (c) Line of authority in absence,
- (d) Status of EMS agency,
- (e) Maintenance of individual authority of requesting incident command or EMS control,
- (f) Local mutual aid plan operations exclusive of city or county plan,
- (g) Assisting state or private institution,
- (h) Assisting federal institution,
- (i) Operation of city or county dispatch center,
- (j) Preparation and use of participants' inventory and resources,
- (k) Participation in the state EMS mobilization and mutual aid plan,
- (l) Procedures to obtain activation,
- (m) Authority and responsibility of EMS agencies and services, and
- (n) Coordination with other EMS services.

6.8.2.4 Equipment Loss Replacement Procedures:

6.8.2.5 Reimbursement.

6.8.2.6 Liability.

6.8.2.7 Operation Command Procedures.

6.8.2.8 Post Incident Evaluation.


6.8.3 *Request*—When requesting mutual aid for an incident, specify the following:

- 6.8.3.1 Nature and location of the MCI,
- 6.8.3.2 Type of equipment and number of personnel requested, and whether specialized personnel are needed,
- 6.8.3.3 Location where assisting units shall report (staging area), and
- 6.8.3.4 Radio frequencies assigned to the incident.

NOTE 1—The agency receiving the request should consider availability of resources and provide the estimated response time to the staging area.

6.8.4 *Decision Plan*—Develop a decision plan for determining when to activate mutual aid agreements, request state aid, or recommend a state request for federal aid. Base the decision on resources, personnel, and number of patients.

6.9 *Evaluation*—The evaluation of an effective pre-hospital EMS system response to a MCI must encompass an objective, as well as a subjective assessment of the planning, needs assessment, training, communication, integration, coordination, mutual aid, implementation, and provision of resources by all organizations and agencies written into that area's plan. Because of the lack of reliable EMS system MCI analysis, all

 **F 1288 – 90 (1998)**

evaluators are urged to share their findings with the EMS and emergency management communities.

6.9.1 *Post Incident Analysis*—A subjective assessment of response to an actual incident should be held for all organizations and agencies that participated in the response. All comments and concerns should be researched for validity and impact in changing the plan.

6.9.1.1 An objective assessment should involve all agencies involved in the response and use a pre-established critique tool developed or accepted by the local planners.

6.9.2 Though the format of the objective critique will differ from area to area, the following principles of evaluation are important to the goal of that area's EMS system's response to MCIs:

6.9.2.1 The critique tool should include but not be limited to a minimum data set that should be collected as close to the conclusion of the emergency state as is safe for responders and is considerate of medical well-being of victims and responders.

6.9.2.2 The minimum data set should include but not be limited to a collection of reproducible data that can be verified and validated by subsequent investigators.

6.9.2.3 Whereas summaries for the data should be a matter of public record accessible to responsible requesters, the actual collected data should be a matter of EMS confidentiality and subject to release and disclosure only under subpoena.

6.9.2.4 This confidentiality for information involving victims and responders must be ensured by the area EMS agency and must not be confused with the purpose of the evaluations, which is to improve the future response.

6.9.2.5 The collected data on MCIs should be summarized and made available.

6.9.2.6 The data should be available for analysis by EMS research groups.

6.9.3 The implementation of the system evaluation after an incident may be accomplished by any qualified researcher (for example, conducted by a formally trained researcher) or participant evaluation group that has received the permission of that area's medical control to collect data.

6.9.3.1 Multi-disciplinary teams are suggested as systems evaluators for timely and efficient completion of the entire critique tool.

IMPLEMENTATION

7. Incident Command Structure

7.1 Introduction

7.1.1 The concept of the incident command system (ICS) was first developed by Fire Suppression Services in an effort to organize an effective response to forestfires, brush fires, and major urban conflagrations. The ICS includes some fundamental practices of management and control of personnel and resources. The general concept currently used by a majority of public safety agencies includes an incident commander or unified command post with staff support officers, and then distinct operational areas: (1) Operations Branch/Section, in charge of the actual tactical deployment of personnel and resources; (2) Financial Branch/Section, for financial and expense/payment accountability, typically found and used with state or federal government response; (3) a Planning Branch/

Section, to prepare short/long term objectives and strategic decisions for incident command; and (4) Logistics Branch/Section, in charge of securing resources and supplies.

7.1.2 The general ICS training courses currently taught throughout the country do not specifically discuss the needs for immediate on-scene responsibilities for EMS.

7.1.3 The concept used in the planning guide for incident command assumes that any EMS agency/jurisdiction having authority to develop and implement an effective multiple casualty incident response plan will have the necessary training and understanding of the generic incident command system. The intent of this planning guide, and specifically this section, is to reinforce the acceptable job responsibilities and functions specifically required to mitigate a multiple casualty incident. This section does not address all of the components of an ICS that may be necessary in order for an EMS agency/jurisdiction to develop, implement, or mitigate an incident within their jurisdiction.

7.1.4 This section does not include specific information for the operations section officer, fire operations, police operations, public works, or hazardous materials teams. It does provide suggested job junctions for the key EMS positions. It does not imply that all positions must be staffed in every incident. The ICS section was prepared and written to provide detailed information for guidance for any EMS agency/jurisdiction needing such information. It is not intended to replace an EMS agency/jurisdiction's existing ICS plan as it relates to the EMS job functions/descriptions of the agency's established ICS plans.

7.1.5 Job descriptions and functions should be developed for all key ICS positions by mutual agreement between responding, responsible EMS agencies/jurisdictions as they relate to the overall incident command plan for a jurisdiction. For the purposes of this planning guide, some job functions were merged together. It should be the responsibility of the EMS agency/jurisdiction writing the multiple casualty incident plans to address any or all of the job functions and ensure that the job functions developed are reviewed by the EMS agencies and jurisdictions having authority for multiple casualty planning, response, and mitigation.

7.1.6 The job descriptions and functions listed in this section are models only and are designed to particularly highlight functions and tasks that must be fulfilled in the EMS operations section of an overall ICS. The model can be implemented by a rural EMS agency/jurisdiction, as well as a municipal EMS agency/jurisdiction. The system is devised around functional areas of management rather than staffing all listed command positions.

7.1.7 Although specific functional areas are emphasized, it does not mean that other areas may not be developed, or that these may not be further subdivided. In any incident, any EMS agency or jurisdiction could have several operating sectors depending upon the incident situations. It is important to remember that, at most, a person given functional responsibility within the ICS should not have more than four or five people under his direct supervision, or supervision should be moved to the next lower level of command within the incident command structure.

ASTM F 1288 – 90 (1998)

7.1.8 The functions of extrication, triage, treatment, and transportation are generally performed on all calls whether it be for two people or 200 people. The incident command model presented here for inclusion for a multiple casualty incident plan is one that is flexible and expandable in the particulars of any given incident.

7.1.9 It should be the responsibility of the EMS agency/jurisdiction having authority to ensure that the participants in the development of the multiple casualty incident planning guide for their jurisdictions have necessary knowledge and training on general incident command concepts and organization.

7.2 *Incident Command Duties*—The function of incident command is the overall management and coordination of all responding personnel and resources. The person assuming this command will be identified primarily by the type of incident, fire, medical, traffic, etc.

7.2.1 Upon arrival at the scene, an individual predetermined by the jurisdiction having authority shall assume the incident command function, and announce his name and title to the communications center for announcement to all other agencies and others involved.

7.2.2 The incident commander should request a face-to-face briefing with the emergency services personnel in charge at that time to obtain the following information:

- 7.2.2.1 Nature and scope of the incident,
- 7.2.2.2 Current situation,
- 7.2.2.3 Operational decisions made,
- 7.2.2.4 Current manpower committed,
- 7.2.2.5 Current resources committed,

7.2.2.6 Number of injuries and number of expected injuries,
7.2.2.7 Radio frequencies currently being used for the incident, and

7.2.2.8 Hazards that may hinder incident operation.

7.2.3 The incident commander should ensure that the following tasks are accomplished:

7.2.3.1 Establish a command post that should house together the police, fire, EMS, and search and rescue, to facilitate making and implementing face-to-face decisions,

7.2.3.2 Announce location of command post,

7.2.3.3 Coordinate interagency on-scene and off-scene communications,

7.2.3.4 Ensure that proper record-keeping is done, including such information as who held what positions at what times, notes, victim data, decision/command orders, log, communications, resources, and personnel present,

7.2.3.5 Designate appropriate ancillary functions: EMS, fire or rescue, logistics, staging, public information,

7.2.3.6 Request additional manpower and equipment, as appropriate,

7.2.3.7 Coordinate and control aircraft traffic in the airspace around the incident,

7.2.3.8 Receive situation reports from ancillary functions regarding the status of operations,

7.2.3.9 Demobilize incident, and

7.2.3.10 Prepare written after-action report.

7.2.4 The flow charts shown in Fig. 1 and Fig. 2 provide two examples of incident command structures utilized during a multiple casualty incident.

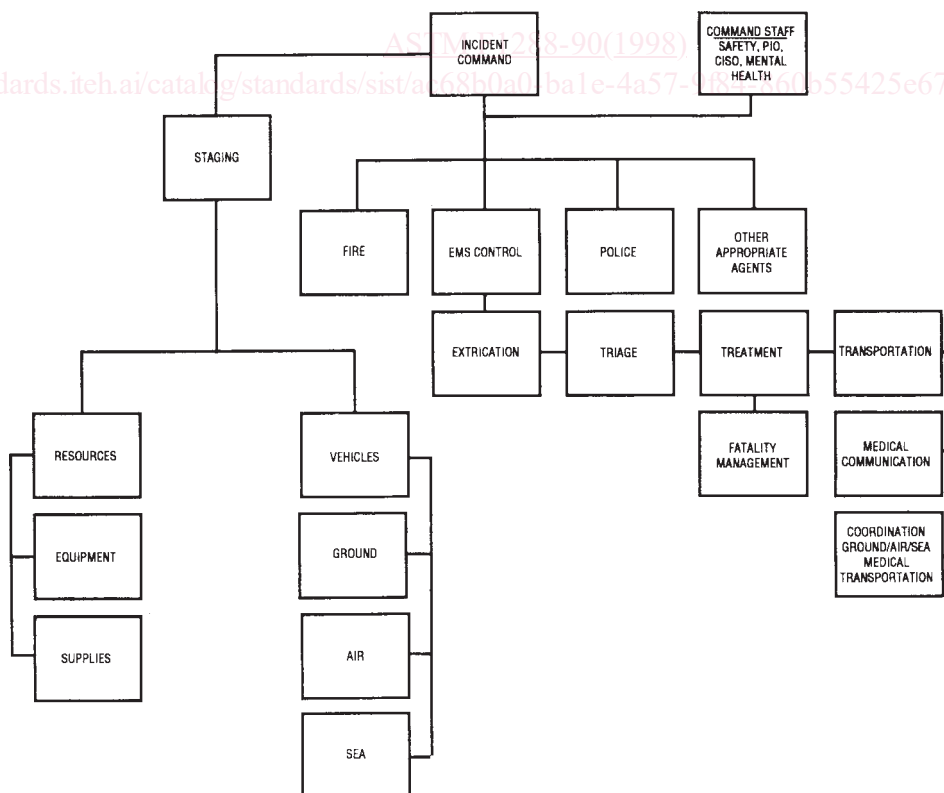


FIG. 1 Example 1—EMS Model for Management and Response