Medical Surge Capacity and Capability:

A Management System for Integrating Medical and Health Resources During Large-Scale Emergencies

The CNA Corporation

IPR/11079

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August 2004

This document was prepared under Contract Number 233-03-0028 for the Department of Health and Human Services. This document represents the best opinion of The CNA Corporation at the time of issue. It does not necessarily represent the opinion of the Department of Health and Human Services.

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Acknowledgments

We gratefully acknowledge and thank the following people for lending their expertise and experience to the development and review of this handbook.

Of particular note is Joseph A. Barbera, MD, a board-certified emergency physician and Co-Director of the Institute for Crisis, Disaster and Risk Management at The George Washington University. Dr. Barbera served as the co-principal investigator for this project.

Anthony G. Macintyre, MD, a board-certified emergency physician and Associate Professor with the Department of Emergency Medicine at The George Washington University, also played a prominent role. Dr. Macintyre served as the co-principal investigator for this project.

Drs. Barbera and Macintyre are co-authors of the following landmark publications in the field of emergency response:

- *Medical and Health Incident Management (MaHIM) System*, a comprehensive functional system description for mass casualty medical and health incident management
- *Jane's Mass Casualty Handbook: Hospital*, designed to assist healthcare facilities and their personnel prepare for, respond to, and recover from mass casualty incidents.

Shayne Brannman, MS, MA, of The CNA Corporation, served as the liaison and strategist for this handbook.

Three members of The CNA Corporation were responsible for book design and production: Lee Woodard, Senior Multimedia Information Technology Producer; Dinah Sunday, Editor; and Patti Magill, Administrative/Project Assistant.

Acknowledgments
(continued)

A host of subject matter experts contributed to this effort, including the following: Susan Allan, MD, JD, MPH; Brad Austin, CDR, USPHS; Sam Benson; Lynne Bergero, MHSA; Robert Blitzer; Pete Brewster; Robert Claypool, MD; Craig DeAtley, PA-C; Judy English, RN; Lily Engstrom; Steve Ennis, CHSP, CFPS; Randall Foy; Zachary Goldfarb, EMT-P; Brian Hastings; Jerry Hauer; Joe Henderson; Fred Henretig, MD; John L. Hick, MD; Jack Hickey; Ralph Lockhart, CAPT, MSC (Ret); Angela Martinelli, CDR, DNSc, USPHS; Ludlow McKay, CDR, USPHS; Susan McLaughlin; Elizabeth Myrus; Rick Nickle; Matthew Payne; Ellen Pryga; William Raub; Jeff Rubin; Jackie Sanders; Melissa Sanders; Ros Schulman; Jeff Short, LTC, USA, MC; Paul Speer, PhD; Leslee Stein-Spencer, RN, MS; James (Chips) Stewart; David Teeter; Susan Waltman; Charles Williams, MD; and Kevin Yeskey, CAPT, USPHS (Ret).

Participation by the subject matter experts in the MSCC project does not necessarily imply their endorsement of the concepts presented in this document.

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Executive Summary

Medical and health systems in the United States face the increasing probability of major emergencies or disasters involving human casualties. Such events will severely challenge the ability of healthcare systems to adequately care for large numbers of patients (surge capacity) and/or victims with unusual or highly specialized medical needs (surge capability). The first step in addressing medical surge is to implement *management systems* that establish a methodology for managing medical and health response, as well as the development and maintenance of preparedness programs.

The Medical Surge Capacity and Capability (MSCC) Management System describes a management methodology based on valid principles of emergency management and the Incident Management System (IMS). Medical and health disciplines may apply these principles to coordinate effectively with one another, and to integrate with other response organizations that have established IMS and emergency management systems (fire service, law enforcement, etc.). This promotes a common management system for all response entities—public and private—that may be brought to bear in an emergency. In addition, the MSCC Management System guides the development of health and medical response that is consistent with the new National Incident Management System (NIMS).

The MSCC Management System emphasizes *responsibility* rather than authority alone for assigning key response functions and advocates a management-by-objectives approach. In this way, the MSCC Management System describes a framework of coordination and integration across six tiers of response:

- ***Management of Individual Healthcare Assets (Tier 1):*** A well-defined IMS to collect and process information, to develop incident plans, and to manage decisions is essential to maximize MSCC. Robust processes must be applicable both to traditional hospital participants and to other healthcare facilities (HCFs) that may provide "hands on" patient care in an emergency. Thus, each healthcare asset must have information management processes to enable integration among HCFs (at Tier 2) and with higher management tiers.
- ***Management of a Healthcare Coalition (Tier 2):*** Coordination among local healthcare assets is critical to provide adequate and consistent care

across an affected jurisdiction.[1] The healthcare coalition provides a central integration mechanism for *information sharing* and *management coordination* among healthcare assets, and also establishes an effective and balanced approach to integrating medical assets into the jurisdiction's IMS.

- ***Jurisdiction Incident Management (Tier 3):*** A jurisdiction's IMS integrates healthcare assets with other response disciplines to provide the structure and support needed to maximize MSCC. In certain events, the jurisdictional IMS promotes a *unified incident management* approach that allows multiple response entities, including health and medicine, to assume significant management responsibility.
- ***Management of State Response (Tier 4):*** State Government participates in medical incident response across a range of capacities, depending on the specific event. The State may be the lead incident management authority, it may primarily provide support to incidents managed at the jurisdictional (Tier 3) level, or it may coordinate multijurisdictional incident response. Important concepts are delineated to accomplish all of these missions, ensuring that the full range of State health and medical resources is brought to bear to maximize MSCC.
- ***Interstate Regional Management Coordination (Tier 5):*** Effective mechanisms must be implemented to promote incident management coordination between affected States. This ensures consistency in regional response through coordinated incident planning, enhances information exchange between interstate jurisdictions, and maximizes MSCC through interstate mutual aid and other support. Tier 5 incorporates existing instruments, such as the Emergency Management Assistance Compact (EMAC), and describes established incident management and mutual aid concepts to address these critical needs.
- ***Federal Support to State and Jurisdiction Management (Tier 6):*** Effective management processes at the State (Tier 4) and jurisdiction (Tier 3) levels facilitate the request, receipt, and integration of Federal health and medical resources to maximize MSCC. The current status of the Federal health and medical response is described, emphasizing the management aspects that are important for State and local managers to understand.

[1] The term *jurisdiction* in this context refers to a geographic area's local government, which commonly has the primary role in emergency or disaster response.

The tiers of the MSCC Management System do not operate in a vacuum. They must be fully coordinated with each other, and with the non-medical incident response, for medical and health resources to provide maximum MSCC. The processes that promote this coordination and integration enable medicine and public health to move beyond their traditional support roles (for example, as an Emergency Support Function) and become competent participants in large-scale medical incident management.

Response systems, by necessity, are adapted to address historically effective capabilities, available resources, specific laws and regulations, and the medical and health infrastructure in a given area. The MSCC Management System is not intended as an "all or nothing" requirement that ignores this reality, and the specific tiers and management processes will not apply equally in all States and jurisdictions. Regardless of how a response system is configured, however, planners must ensure that all key management *functions* are addressed. The MSCC Management System provides a model to conduct this assessment.

Many of the tenets of the MSCC Management System are not easily achieved. For example, garnering support and participation from medical clinics and private physician offices, while laudable, is by no means a simple task to accomplish. Because the private medical community is so diverse and disconnected, there is wide variation in motivation and constraints to implementing these processes. This may cause incomplete realization of some of the tier goals and objectives. Nevertheless, the MSCC Management System provides an overarching model that can help to organize seemingly disparate preparedness efforts. It may also assist in illustrating, for any reluctant medical administrators, the critical role played by private medical assets.

The newly developed NIMS makes it increasingly important for medicine and public health to adopt response systems based on IMS principles. NIMS establishes core concepts and organizational processes based on IMS to allow diverse disciplines from all levels of government and the private sector to work together in response to domestic hazards. NIMS compliance is required of all Federal departments and agencies, as well as State and jurisdictional organizations that seek Federal preparedness assistance (grants, contracts, etc.). With its basis in IMS, the MSCC Management System helps to ensure that medical and health organizations develop NIMS-consistent relationships, strategies, processes, and procedures, and become equal partners that are fully integrated into the emergency response community.

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Introduction

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Why the MSCC Project?

In the aftermath of the September 11 terrorist attacks and the anthrax dissemination during the fall of 2001, the ability of the U.S. healthcare system to provide an effective and coordinated response to mass casualty or complex[1] incidents has come under intense scrutiny. At the time of this project's inception, little evidence existed of cohesive strategies that focus on overall *management systems* for medical surge capacity and capability (MSCC). The critical question becomes:

> What management structure will allow us to discuss, analyze, and describe complex medical and health response under exceptional[2] circumstances *as a single system*?

Examinations of major public health and medical emergencies reveal exceptionally complex management scenarios. This is true for all hazards (natural disasters, infectious diseases, terrorism, large-scale explosives, and others) and is apparent even in events without large numbers of *physically* injured or ill patients. Medical evaluation and treatment of incident victims require many complicated tasks that extend beyond hands-on medical care and are dispersed across a wide range of resources. Surprisingly, however, the *management* of such complex scenarios has traditionally received very little attention.

In addition to ensuring adequate patient care, critical management responsibilities in major medical and public health incidents include:

- ***Responder safety:*** The protection of healthcare personnel and other responders as they perform activities to minimize the health impact on an affected population is paramount. Personal protective equipment (PPE), vaccination, prophylactic medication, and other interventions may need to be addressed in the midst of a rapidly evolving emergency.

[1] In *complex* incidents, the victims have unusual medical needs or require medical care that is not readily available. These medical needs may be difficult to define or address without specialized expertise, even with only a few casualties.

[2] Throughout this document, *exceptional* refers to unusual numbers or types of victims, affected medical care systems, or other adverse conditions.

- ***Information management:*** A large amount of complex information must be collected, analyzed, and managed to determine incident parameters and response needs. Information is needed to rapidly and accurately determine patient distribution and numbers, the range of injury and illness caused by the hazard, recommendations for evaluation and treatment, the post-impact condition of health and medical assets, and other response considerations.
- ***Coordinating diverse operating systems:*** The multiple disciplines involved in response to a complex medical event do not routinely work together. This complicates interaction when they engage under the stress of incident response.
- ***Resolving intergovernmental issues:*** Major medical incidents often involve initiatives across multiple levels of government. Usually, Federal and State Governments operate in support of the local response, though the reverse may occur. Management activities at each level will vary from incident to incident and must be well coordinated.
- ***Medical asset support:*** For health and medical response agencies to perform optimally, extensive logistical, financial, and administrative support is necessary. This may include ensuring prompt and reasonable financial compensation for extraordinary medical efforts, and temporarily releasing medical assets from certain regulatory and compensatory requirements so they may increase patient volume.
- ***Addressing time constraints:*** Medical emergencies are time-sensitive and require rapid intervention by clinicians to address the urgent medical and surgical needs of victims. In addition, rapid public health and public safety interventions are necessary to limit the number and/or severity of casualties.
- ***Incorporating health and medical assets into public safety response:*** In many locales, health and medicine are not recognized as traditional first responders. As a result, response difficulties arise, and there are significant implications for training, funding, safety, and recovery.

Given the complexity of response to major public health and medical events described here and elsewhere, sustainable solutions to these multifaceted challenges have been elusive. The MSCC Management System proposed in this document outlines and recommends a systems-based[3] approach that focuses on the management solution for these complex tasks.

[3] The term *system* in this project means a clearly described functional structure, including defined processes, that coordinates otherwise diverse parts to achieve a common goal.

It describes how to manage, within a single system, the diverse public health and medical entities involved in incident response, and it identifies mechanisms to integrate medical and public health assets with traditional response disciplines (e.g., public safety, emergency management).

The basis of the MSCC handbook is the *Medical and Health Incident Management (MaHIM) System,* the first published U.S. effort to conceptually address the complex health and medical issues that arise during major medical incidents.[4] The MaHIM model provides a comprehensive system description of the *functional* components critical to effective response for any mass casualty event. It further describes the processes that coordinate these functions to limit morbidity and mortality after exposure to a hazard. The MSCC Management System extracts key concepts from MaHIM to develop practical, operational guidance for medical and health emergency planners.

MSCC Project Goal

The goal of this project is to develop a management system (framework) that maximizes the ability to provide adequate medical evaluation and care during events that exceed the normal medical capacity and capability of an affected community.

MSCC Project Objectives

The primary objectives of this project are to:

- Assist healthcare facilities, other acute-care medical assets, and local/regional emergency response entities in establishing and integrating effective management systems during emergencies and disasters.
- Provide concrete operational direction without supplanting State and local authorities' responsibilities and initiatives. This guidance must be flexible and allow the integration of ongoing initiatives and programs, while maintaining consistent management architecture.

[4] J. A. Barbera and A. G. Macintyre. *Medical and Health Incident Management (MaHIM) System: A Comprehensive Functional System Description for Mass Casualty Medical and Health Incident Management.* Institute for Crisis, Disaster, and Risk Management, The George Washington University. Washington, DC, October 2002. Available at http://www.gwu.edu/~icdrm/.

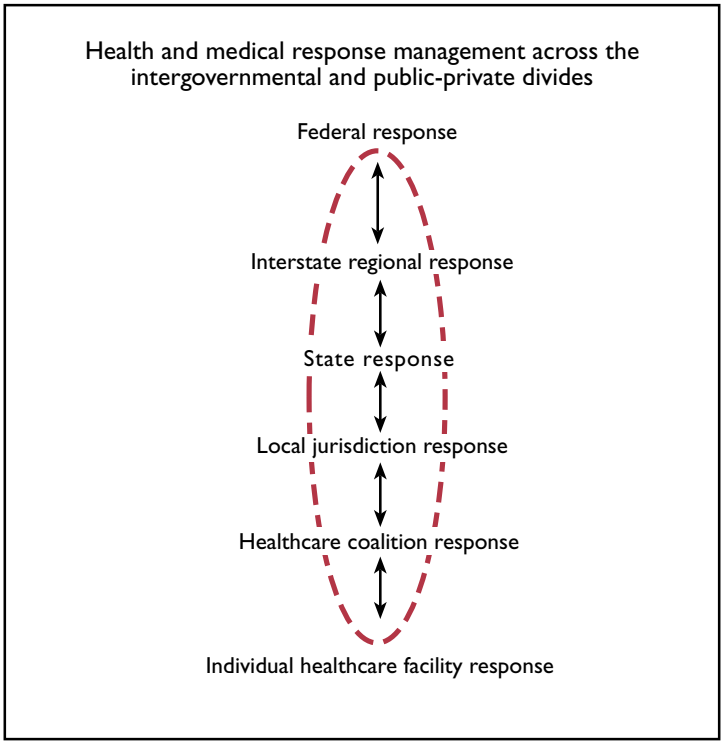
- Integrate the use of established incident management principles.[5]
- Promote coordination between medical response management and the larger emergency response community.
- Delineate information management and coordination processes that can be established at the local and regional levels to rapidly enhance surge capacity and capability.
- Define a management system that is directly applicable to mitigation, preparedness, response, and recovery activities, and on which current and future training efforts may be based.
- Promote adoption of systems that are consistent with the National Incident Management System (NIMS).
- Use a working group process to obtain a wide range of expert input through an open, valid peer review of concepts and products.

MSCC Project Scope

As shown on the facing page, the MSCC handbook presents a system for management integration that ranges from the individual healthcare facility (HCF) through jurisdictional, State, and Federal Government levels.[6] Because of the local jurisdiction's central role in providing MSCC, the handbook's primary emphasis is on *jurisdictional incident management* and the coordination and support of HCFs. The focus is further narrowed to the functions and processes that promote integration of assets into an overall response system and coordination between assets.

[5] The Incident Command System (ICS) or Incident Management System (IMS) is currently used to manage most emergencies or disasters in the United States. For this handbook, IMS is the more applicable designation because medical and health assets in the United States are generally disparate entities that are not connected through any inherently defined "command" structure. A primer on ICS/IMS for medical and public health professionals is provided in Appendix B.

[6] The MSCC handbook acknowledges the sovereignty of Tribal nations and the responsibility of Tribes for preparedness and response planning in areas governed by Tribal authority. When incident circumstances warrant, management integration may include Tribal authority. In States where Tribal nations are located, State and local emergency planning should consider Tribal health and medical resources that may be called on to augment State or local response efforts.



What the MSCC Management System Is

The MSCC Management System is designed to promote the integration of existing programs for incident management used by hospitals, public health, and traditional response entities into an overarching *management system* for major medical response. It defines the basic requirements for medical and health asset participation in the overall response system. Rather than focus on narrow topics (e.g., communications or training), the MSCC Management System examines functional relationships across the range of response needs. In so doing, it provides a systematic approach to organize and coordinate available health and medical resources so they perform optimally under the stress of an emergency or disaster.

The MSCC Management System seeks to enhance management integration and coordination by:

- Defining a system that integrates the management of local, State, and Federal medical response to provide optimal surge capacity and capability, while protecting healthcare staff, current patients, and facility integrity.
- Defining the management relationship between HCFs and providers, and the multiple levels of government response.
- Establishing incident planning processes and information management to promote an integrated medical response that is timely and accurate.
- Incorporating incident management system principles to facilitate medical system integration with non-medical incident management during response, and to establish acute care medicine as "first responders" in the emergency response community.
- Providing a platform for effective training of medical incident management and response, from the local to the Federal response levels.

What the MSCC Management System Is Not

This handbook does not address the *internal* management of individual public health and medical assets, nor is it specifically for hospital emergency preparedness. It does not attempt to redefine the operational methods of other entities (e.g., law enforcement, fire service, emergency management) that also have as primary missions the preservation of life and/or critical infrastructure. Though the handbook describes overall management processes and systems, it is not a comprehensive, standalone description of MSCC. For example, it does not address the specific amounts of materials, personnel, and other resources required for specific numbers of patients. Moreover, it provides only a general description of Federal programs that currently exist, or those in development, to address quantitative adequacy in surge capacity. The chapter on Federal response (Chapter 7) focuses on how State and local response systems may organize to improve the ability of the Federal Government to assist in times of great need.[7]

[7] The National Response Plan and individual Federal health and medical programs should be accessed for specifics on these Federal capabilities.

How To Use This Document

The MSCC Management System is intended for all professionals in the U.S. who are involved in planning for, responding to, and recovering from domestic health and medical emergencies or disasters. They include, but are not limited to, public health (State and local) and emergency management personnel, hospital emergency planners, public safety personnel, healthcare executives, health and medical providers, and political officials responsible for emergency preparedness and response. The handbook is meant to promote collaborative planning and discussion among these professionals.

Readers may apply the management processes detailed in the MSCC handbook to ongoing preparedness planning activities, including initial development or revision of existing procedures. The processes may be used in evaluating how well existing plans facilitate cooperative planning and community integration of health and medical assets. This will help to ensure that adopted systems are consistent with NIMS, a requirement for Federal funding. The processes described are also relevant as evaluative measures during after-action analyses, and in developing and implementing preparedness training. Finally, readers may apply the management processes during exercises and small or low-intensity events (e.g., managing community healthcare issues in a snow emergency) to prepare for response under more severe incident stress. The concepts are applicable to response across all hazards, from small incidents to the largest and most intense events.

NOTES

Chapter 1: Overview of MSCC and Incident Management Systems

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Key Points of the Chapter

Mass casualty or complex incidents create demands that often challenge or exceed the medical infrastructure of an affected community. The ability to provide adequate medical care under such circumstances is known as medical surge. There are two components of medical surge: (1) surge *capacity* is the ability to respond to a markedly increased number of patients; (2) surge *capability* is the ability to address unusual or very specialized medical needs. Strategies to enhance medical surge capacity and capability (MSCC) require a systems-based approach that is rooted in interdisciplinary coordination and based at the local level.

The MSCC Management System describes a framework of coordination across six tiers of response, building from the individual healthcare facility (HCF) and its integration into a local healthcare coalition, to the integration of Federal health and medical support. The most critical tier is *jurisdiction incident management* (Tier 3) since it is the primary site of integration for health and medical assets with other response disciplines. Each tier must be effectively managed internally in order to integrate externally with other tiers.

Emergency management and Incident Management System (IMS) concepts form the basis of the MSCC Management System. Within IMS, response assets are organized into five functional areas: *Management* establishes the incident goals and objectives (and in so doing defines the incident); *Operations* develops the specific tactics and executes activities to accomplish the goals and objectives; and *Plans/Information, Logistics,* and *Administration/Finance* support Management and Operations. The Plans/Information function is particularly critical because it manages complex information across tiers and facilitates information exchange among responders to promote consistency within the overall system.

Because multiple agencies may have leadership responsibilities in a mass casualty or complex incident, a unified management approach is essential. Unified management enables disparate entities (both public and private) to collaborate and actively participate in the development of incident goals, objectives, and an overarching response strategy. Participation by public health and medical disciplines in unified management is important since these disciplines have a primary responsibility for ensuring the welfare of responders and the general public. Where unified management is not implemented due to sovereignty issues (e.g., across State borders or between private facilities), effective mechanisms for management coordination should be established.

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1.1 What is Medical Surge?

The concept of medical surge forms the cornerstone of preparedness planning efforts for major medical incidents. It is important, therefore, to define this term before analyzing solutions for the overall needs of mass casualty or complex incidents.

> ***Medical surge*** describes the ability to provide adequate[1] medical evaluation and care during events that exceed the limits of the normal medical infrastructure of an affected community.

Beyond this rather simple explanation, medical surge is an extraordinarily complex topic that is difficult to comprehensively describe. The first step in doing so, however, is to distinguish surge *capacity* from surge *capability*.

1.1.1 Medical Surge Capacity

Medical surge capacity refers to the ability to evaluate and care for a markedly *increased volume* of patients—one that challenges or exceeds normal operating capacity. The surge requirements may extend beyond direct patient care to include such tasks as extensive laboratory studies or epidemiological investigations.

Because of its relation to patient volume, most current initiatives to address surge capacity focus on identifying adequate *numbers* of hospital beds, personnel, pharmaceuticals, supplies, and equipment. The problem with this approach is that the necessary standby quantity of each critical asset depends on the systems and processes that:

- Identify the medical need;
- Identify the resources to address the need in a timely manner;
- Move the resources expeditiously to locations of patient need (as applicable); and
- Manage and support the resources to their absolute maximum capacity.

In other words, fewer standby resources are necessary if systems are in place to maximize the abilities of existing operational resources. Moreover, the integration of additional resources (whether standby, mutual aid, State or Federal aid) is difficult without adequate management systems. Thus, medical surge capacity is primarily about the *systems and processes* that influence specific asset quantity (Exhibit 1-1).

[1]Throughout this document, the term *adequate* implies a system, process, procedure, or quantity that will achieve a defined response objective.

Exhibit 1-1. Medical Surge Capacity

Basic example: If a hospital wishes to have the capacity to medically manage 10 additional patients on respirators, it could buy, store, and maintain 10 respirators. This would provide an important component of that capacity (other critical care equipment and staff would also be needed), but it would also be very expensive for the facility. If the hospital establishes a mutual aid and/or cooperative agreement with regional hospitals, it might be able to rely on neighboring hospitals to loan respirators and credentialed staff and, therefore, might need to invest in only a few standby items (e.g., extra critical care beds) that generate no income except during rare emergency situations.

1.1.2 Medical Surge Capability

Medical surge capability refers to the ability to manage patients requiring *unusual* or very *specialized* medical evaluation and care. Surge requirements span the range of specialized medical and health services (expertise, information, procedures, equipment, or personnel) that are not normally available at the location where they are needed (e.g., pediatric care provided at non-pediatric facilities). Surge capability also includes patient problems that require special intervention to protect medical providers, other patients, and the integrity of the medical care facility (Exhibit 1-2).

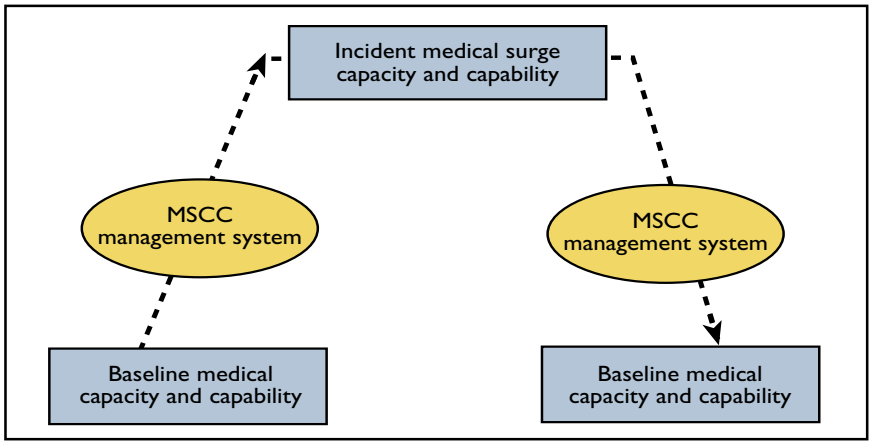
Exhibit 1-2. Medical Surge Capability

Basic example: Many HCFs encountered difficulties with the arrival of patients with symptoms of severe acute respiratory syndrome (SARS). The challenge was not presented by a high volume of patients, but rather by the specialty requirements of caring for a few patients with a highly contagious illness that demonstrated particular transmissibility in the healthcare setting. Protection of staff and other patients was a high priority, as was screening incoming patients for illness, preventing undue concerns among staff, and avoiding publicity that could adversely affect the hospital's business. Coordination with public health, emergency management, and other response assets was critical.

1.1.3 Requirements of MSCC Strategies

Effective strategies for MSCC require a *systematic* approach to meet patient needs that challenge or exceed normal operational abilities, while preserving quality of care and the integrity of the healthcare system. The MSCC Management System demonstrates management processes that allow facilities to coordinate existing resources and then obtain "outside" assistance in a timely and efficient manner. In this way, facilities can transition from baseline operations to incident surge capacity and capability—to meet the response needs of catastrophic events—and then back to baseline (Figure 1-1).

Figure 1-1. Management System for Reaching MSCC Objectives



Any strategy to enhance MSCC must recognize that the required emergency interventions are time sensitive and must be based primarily at the local level. This urgency limits the ability of the Federal Government to independently establish, stockpile, or own/control resources necessary for immediate MSCC. In addition, because most medical assets in the United States are privately owned, MSCC strategies must bridge the public-private divide, as well as integrate multiple disciplines and levels of government.

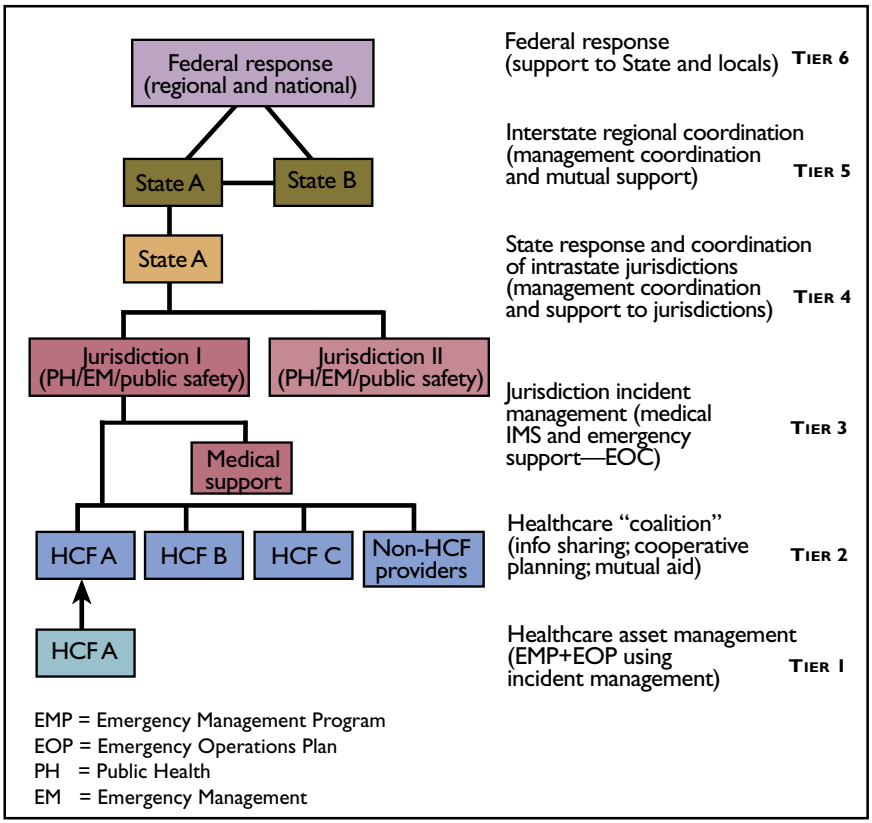
A comprehensive effort to address response requirements must include a system description (i.e., how the different response components are organized and managed) and a concept of operations (i.e., how the system components function and interact through successive stages of an event). The remainder of this chapter presents key considerations for the system design and the concept of operations to maximize integration between response components and, thus, enhance MSCC.

1.2 The MSCC Management System

The MSCC Management System describes a system of interdisciplinary coordination that emphasizes responsibility rather than authority. In other words, each health and medical asset is responsible for managing its own operations, as well as integrating with other response entities in a tiered framework. This allows response assets to coordinate in a defined manner that is more effective than the individual, ad hoc relationships that otherwise occur during a major emergency or disaster.

The six-tier construct (Figure 1-2) depicts the various levels of health and medical asset management during response to mass casualty or complex incidents. The tiers range from the individual HCF and its integration into a local healthcare coalition, to the coordination of Federal assistance. Each tier must be effectively managed internally in order to coordinate and integrate externally with other tiers.

Figure 1-2. MSCC Management Organization Strategy



1.2.1 Management of Individual Healthcare Assets (Tier 1)

Tier 1 includes hospitals, integrated healthcare systems, private physician offices, outpatient clinics, and other resources where "point of service" medical care is provided. Emergency Medical Services (EMS) may be included in Tier 1 if called on to provide field-based medical care in an emergency. The goal of Tier 1 is to maximize MSCC within each healthcare asset while ensuring the safety of personnel and other patients, and the integrity of the facility. This is best accomplished by optimizing an entity's Emergency Operations Plan (EOP) to effectively manage internal resources and to integrate with external response assets. The MSCC Management System describes key considerations for internal preparedness planning, yet it focuses primarily on the processes within the EOP that facilitate external integration with the larger response community.

1.2.2 Management of the Healthcare Coalition (Tier 2)

The healthcare coalition organizes individual healthcare assets into a single functional unit. Its goal is to maximize MSCC across the coalition through *cooperative planning, information sharing, and management coordination*. The coalition ensures that health and medical assets have the information and data they need at a level of detail that will enable them to optimally provide MSCC. In addition to hospitals, the coalition may include long-term care or alternative treatment facilities, private physician offices, clinics, and any other health or medical asset that may be brought to bear during major medical response. Its reach may extend beyond the geographic area of the primary responding jurisdiction (Tier 3), especially in rural settings.

Tier 2 strengthens MSCC by creating the ability to move medical resources (e.g., personnel, facilities, equipment, supplies) to sites of greatest need.[2] This is accomplished through mutual aid and cooperative agreements[3] between HCFs. It also provides a platform for unified interface with the jurisdiction's incident management (Tier 3). The coalition establishes a planning process that is equal and fair to all participants, giving each the opportunity for input during preparedness planning, response, and recovery.

[2]Traditionally, patient needs are matched with available resources by evenly distributing large numbers, or very ill/injured patients, to available facilities. This is logistically difficult because, in a mass casualty or complex incident, many victims self-refer for medical care (i.e., arrive outside the formal EMS system).

[3]Cooperative agreements provide the same services as mutual aid, but they establish a mechanism for payment for the responding services by the affected jurisdiction.

1.2.3 Jurisdiction Incident Management (Tier 3)

Tier 3 directly integrates HCFs with other response disciplines (e.g., public safety, emergency management) to maximize jurisdictional MSCC. It is the most critical tier for integrating the full range of disciplines that may be needed in a mass casualty or complex medical event. The focus of Tier 3 is to describe how to effectively coordinate and manage diverse disciplines in support of medical surge demands. This requires healthcare assets to be recognized as integral members of the responder community and to participate in management, operations, and support activities. In other words, health and medical disciplines must move from a traditional support role based on an Emergency Support Function (ESF) to part of a unified incident management system. This is especially important during events that are primarily health and medical in nature, such as infectious disease outbreaks.

1.2.4 Management of State Response and Coordination of Intrastate Jurisdictions (Tier 4)

To address MSCC, Tier 4 describes how State-level actions can support jurisdiction incident management (Tier 3), promote coordination among multiple affected jurisdictions, or assume a primary incident management role. The State management function also serves as the primary interface for requesting Federal assistance. During preparedness planning, State agencies may facilitate arrangements between jurisdictions to coordinate response assets. The use of strategic mutual aid and/or cooperative agreements may standardize the implementation of tactical mutual aid between jurisdictions and promote a cohesive response strategy during a widespread incident.

1.2.5 Interstate Regional Management Coordination (Tier 5)

Tier 5 describes how to maximize interstate coordination to support MSCC. In the past, interstate coordination generally depended on ad hoc arrangements, goodwill at the time of an incident, and other less-than-predictable mechanisms. However, this changed when Congress enacted the Emergency Management Assistance Compact in 1996 (Public Law 104-321). EMAC, as it is commonly known, has now been accepted by almost all States and provides legal authority, financial mechanisms, and operational guidance to establish the ability to request and receive

emergency assistance from other States. This tier focuses on how to manage interstate medical and health assistance and examines how mutual aid, incident management coordination, and information sharing can enhance MSCC.

1.2.6 Federal Support to State and Jurisdiction Management (Tier 6)

The Federal Government maintains health and medical resources to support State and jurisdictional authorities during a mass casualty or complex incident. The goal of Tier 6 is to maximize MSCC through the optimal integration and management of Federal health and medical assets. Activation of Federal assistance may occur through implementation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (424 USC 5121, et seq.) or through independent authority of the Department of Health and Human Services (HHS) to declare a public health emergency or disaster. The National Response Plan and National Incident Management System (NIMS) provide operational guidance for Federal action. Tier 6 focuses on key functional concepts that promote integration of the Federal response.

1.3 Emergency Management and Incident Management Systems

Emergency management and Incident Management System (IMS) concepts serve as the basis for the MSCC Management System.[4] However, unlike traditional descriptions of emergency management and IMS, which organize assets around a defined scene, the MSCC Management System has adapted the concepts to be more applicable to large-scale medical response where there is no defined scene, or where multiple incident scenes may exist (e.g., infectious disease outbreak). Health and medical professionals must understand the utility of emergency management and IMS concepts as they relate to public health and medical disciplines.[5] The following pages examine key distinctions between emergency management and IMS and the roles that each is designed to fulfill *during* a major medical incident.

[4]Appendix A highlights several critical assumptions that were made in developing the MSCC Management System.

[5]Appendix B describes the basic IMS for public health and medical personnel.

1.3.1 Emergency Management

Emergency management describes the science of managing complex systems and multidisciplinary personnel to address extreme events, across all hazards, and through the phases of mitigation, preparedness, response, and recovery. Hospital staff and other healthcare personnel might equate emergency management activities to a hospital's Disaster Committee (hence the recommended name change to Emergency Management Committee). The sum of all emergency management activities conducted by a response organization may be collectively referred to as an Emergency Management Program (EMP) for that entity. The term *program* is used because it denotes activity that is continuously ongoing, whereas a *plan* is often considered a series of actions that occur only in response to defined circumstances.

The activities of the EMP address the phases of mitigation, preparedness, response, and recovery. Each phase is briefly described below.

- ***Mitigation*** involves identifying potential hazards, understanding their impact, and taking actions to either prevent the hazard or minimize its impact should it occur. It is the cornerstone of emergency management because any response strategy relies on medical assets surviving a hazard and maintaining operations in the post-impact environment. An effective mitigation effort should begin with, and be based on, a valid hazard and vulnerability analysis (HVA) as this will help an organization prioritize issues during follow-on mitigation and preparedness planning.[6]
- ***Preparedness*** activities establish, exercise, refine, and maintain systems used for response. The critical task in preparedness planning is to define the system (how assets are organized) and processes (actions and interactions that must occur) that will guide response. Staff should be educated and trained on the system so they gain the skills necessary to adequately perform their assigned roles.

[6]The HVA is discussed in more detail in Chapter 2.

- ***Response*** activities directly address the hazard impact, including actions taken in anticipation of an impending event (e.g., hurricane, tornado) and actions after an impact has occurred. Specific guidance for incident response, including processes for asset deployment, is addressed in an Emergency Operations Plan (EOP). An effective EOP not only guides the initial (reactive) response actions but also promotes transition to subsequent (proactive) incident management.
- ***Recovery*** activities restore the community to "normal" after a major incident. The initial recovery stage (which actually begins in the late stages of response) is integrated with response mechanisms, and the EOP incident management process may be extended into recovery. The management transition from response to recovery (both timing and methods) must be carefully planned and implemented to avoid problems. As recovery progresses, IMS transitions to regular agency management processes or some intermediate method defined by the responsible organizations.

1.3.2 Incident Management System

The IMS (or Incident Command System, as described in NIMS) refers to the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure and designed to aid in the management of resources during incident response. The MSCC Management System emphasizes *management* rather than command because no inherent "line authority" exists in a multidisciplinary response by which assets can be commanded. This is particularly true for medical assets, which are primarily private entities. IMS is based on eight concepts that contribute to the successful application of this system (Exhibit 1-3).

Exhibit 1-3. Incident Management System Core Concepts

Common terminology—use of similar terms and definitions for resource descriptions, organizational functions, and incident facilities across disciplines.

Integrated communications—ability to send and receive information within an organization, as well as externally to other disciplines.

Modular organization—response resources are organized according to their responsibilities. Assets within each functional unit may be expanded or contracted based on the requirements of the event.

Unified command structure—multiple disciplines work through their designated managers to establish common objectives and strategies to prevent conflict or duplication of effort.

Manageable span of control—response organization is structured so that each supervisory level oversees an appropriate number of assets (varies based on size and complexity of the event) so it can maintain effective supervision.

Consolidated action plans—a single, formal documentation of incident goals, objectives, and strategies defined by unified incident management.

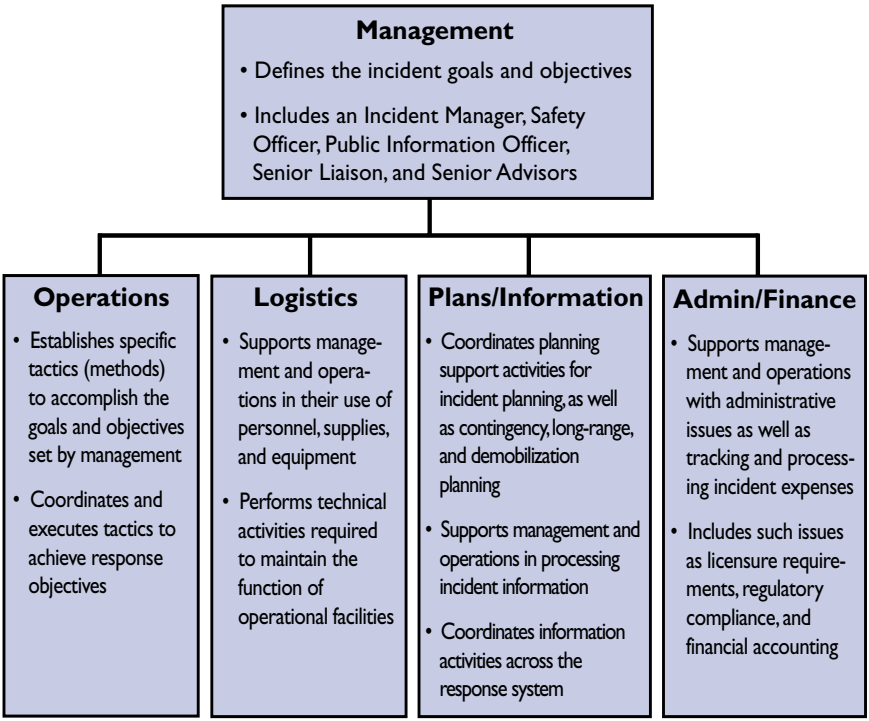
Comprehensive resource management—systems in place to describe, maintain, identify, request, and track resources.

Pre-designated incident facilities—assignment of locations where expected critical incident-related functions will occur.

The IMS provides guidance for how to organize assets to respond to an incident (system description). All response assets are organized into five functional[7] areas: Management, Operations, Plans/Information, Logistics, and Administration/Finance. Figure 1-3 highlights the five functional areas of IMS and their primary responsibilities.

[7]A *function* is a key set of tasks that must be performed during incident response. They are grouped according to similarity of purpose but are not positions, per se, because each could entail multiple persons working to fulfill that function.

Figure 1-3. Incident Management System



For IMS to be effective, the incident must be formally defined so that there is clarity and consistency as to what is being managed. This may be best accomplished by defining the *incident response* through delineation of response goals and objectives, and by explaining response parameters through an Incident Action Plan (IAP)—the primary documentation that is produced by the incident action planning process (Exhibit 1-4).[8]

[8]Key components of an action plan are presented in Appendix C.

Exhibit 1-4. Defining the Incident Response

Early in the response to the Pentagon on September 11, incident management (headed by the Arlington County, VA, Fire Department) defined the incident as managing the fire suppression, building collapse, and the search and rescue activities at the Pentagon. It did not include objectives for managing the disruption of traffic or other countywide ramifications of the plane crash. Arlington County emergency management officials, therefore, quickly knew they had to manage these other problems through their Emergency Operations Center (EOC), which was geographically separate from, but closely coordinated with, incident management at the Pentagon.

The utility of IMS becomes evident when analyzing the demands encountered during an incident response (Figure 1-4).

Figure 1-4. Types of Demands Encountered in Incident Response

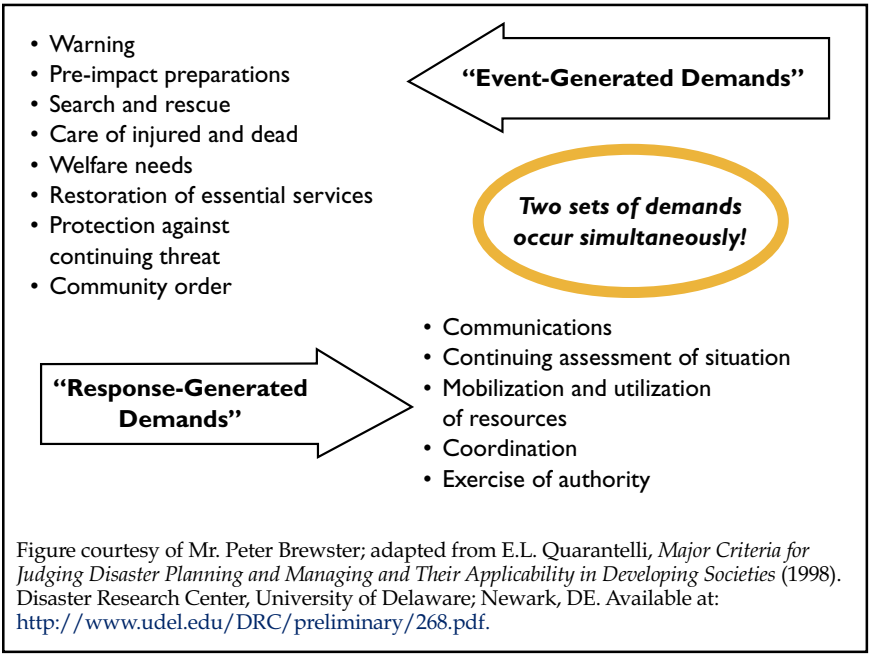


Figure courtesy of Mr. Peter Brewster; adapted from E.L. Quarantelli, *Major Criteria for Judging Disaster Planning and Managing and Their Applicability in Developing Societies* (1998). Disaster Research Center, University of Delaware; Newark, DE. Available at: http://www.udel.edu/DRC/preliminary/268.pdf.

When a significant event generates demands on the response system, the issues addressed first are usually demands created by the hazard itself—*event-generated demands*. For example, in a highly contagious disease outbreak, event-generated demands include the need to evaluate and treat victims, while controlling the spread of the disease in the at-risk population. Simultaneously, the response system itself creates *response-generated demands.* In the same example, these demands include the need to coordinate disparate resources, to process widely dispersed data into accurate epidemiological information, to coordinate the public message, and to protect healthcare workers. Too often, the response community focuses on the event demands and neglects response demands until the latter create a significant impediment to overall response effectiveness. With well-developed IMS and emergency management support, the incident response proactively addresses *both* types of demands and, in fact, reduces many response-generated demands to routine status.

1.4 The Incident Management Process

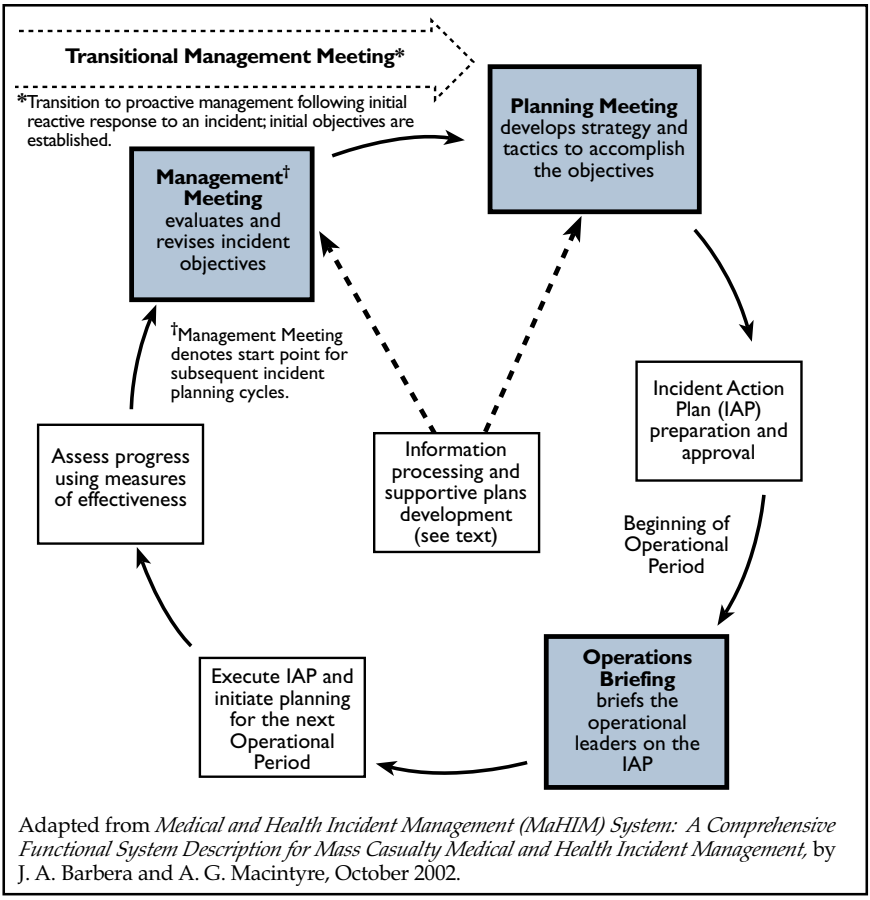
The incident management process describes an ordered sequence of actions that:

- Establishes incident goals (where the system wants to be at the end of response);
- Defines incident objectives (how to get there) and strategies to meet the defined goals;
- Adequately disseminates information, including the following, to achieve coordination throughout IMS:
  - Response goals, objectives, and strategies;
  - Situation status reports;
  - Resource status updates;
  - Safety issues for responders;
  - Communication methods for responders;
- Evaluates strategies and tactics for effectiveness in achieving objectives and monitors ongoing circumstances; and
- Revises the objectives, strategies, and tactics as dictated by incident circumstances.

Actions during the initial phases of incident response should be guided by checklist procedures established in the EOP. For any response of more than a few hours, management should transition to a method of proactive response by establishing incident objectives. These objectives are qualified by defined strategies and tactics and documented in an IAP. Because event parameters and the status of the components of an asset will change, incident objectives will have to change as the response evolves.

This flux in incident and response conditions is best managed using a deliberate planning process that is based on regular, cyclical reevaluation of the incident objectives. Commonly known in ICS/IMS as the planning cycle (see Figure 1-5), this iterative process enhances the integration of health and medical assets with other response agencies that operate planning cycles.

Figure 1-5. Basic Presentation of a Planning Cycle



Adapted from *Medical and Health Incident Management (MaHIM) System: A Comprehensive Functional System Description for Mass Casualty Medical and Health Incident Management,* by J. A. Barbera and A. G. Macintyre, October 2002.

The timing of the development of response plans should be coordinated among disciplines so that updated information may be shared before strategies and objectives are established. As shown in Figure 1-5, the key steps in the planning cycle are:

- **Transitional management meeting:** This marks the transition in incident response from reactive to proactive incident management. The transitional meeting brings together the leadership of key response disciplines, defines the primary incident management team, and allows managers to be briefed on the known incident parameters. If the lead incident manager determines that formal incident planning is warranted, the managers set initial incident objectives and the planning cycle process moves forward.
- **Planning meeting:** Using incident objectives set during the transitional (or a subsequent) management meeting, the management team, with leaders of key functional areas, sets strategies and general tactics. These are documented by the Plans/Information section and become a central component of the IAP. For health and medical disciplines, documentation of an action plan has rarely been undertaken as an essential action during response, and yet it is one of the most effective means for coordinating between multiple locations, resources, and levels of government. The addition of supportive plans[9] completes the IAP for the upcoming operational period.
- **Operational briefing:** All components of the response system are briefed on the incident objectives, strategies, and tactics. The purpose of the operational briefing is to impart information and to raise emergent issues, not to discuss alternative plans, debate choices made in the planning process, or undertake extensive problem solving. In traditional descriptions of ICS, the operational briefing occurs in person, but it may also occur telephonically or through electronic communications. A defined briefing process imposes discipline for the operational briefings so that time constraints are met, distractions are limited, and questions are kept to a minimum.

[9]Supportive plans include the Safety Plan, the Medical Plan (for responders), contingency plans, and others.

- **Management meeting:** This marks the onset of the next planning cycle. Incident managers reevaluate incident objectives and progress made in meeting the set objectives, based on information collected throughout the operational period. Objectives are revised and new ones are established as appropriate.

The following critical points should be made about the planning cycle:

- Tiers, and assets within tiers, should attempt to coordinate their planning cycles with that of the primary incident management. This allows information exchange between assets and tiers to promote consistency in the development of incident objectives and strategies.
- A planning cycle is timed so the operational briefing occurs just before the beginning of work that is guided by the recently completed IAP. This work interval is usually referred to as an *operational period.* It is beneficial, therefore, for assets directly managed by the IAP to establish common operational periods.
- Throughout the action planning process, the Plans/Information function plays a critical role by stewarding the planning activities and processing data into information that is relevant to incident decision-making.

1.4.1 Unified Incident Management

Multiple organizations may have leadership responsibilities during a mass casualty or complex event. IMS has a designated model, Unified Incident Management (UIM), that allows multiple stakeholders to actively participate in incident management (Exhibit 1-5). When this occurs, the resulting Unified Incident Management Team (UIMT) promotes cohesive action within the response system, and provides a uniform interface for integration with other tiers. This concept is critically relevant for participation by health and medical disciplines since they bear a primary responsibility for the well-being of responders and the general population during emergencies or disasters. The unified management model provides a mechanism for direct input from health and medical practitioners at the decision-making level.

Exhibit 1-5. Unified Incident Management (UIM)

UIM brings together incident managers of all major organizations involved in the incident to coordinate an effective response, while allowing each manager to carry out his/her own jurisdictional or discipline responsibilities. UIM links response organizations at the leadership level, thus providing a forum for these entities to make joint decisions. Under UIM, various jurisdictions and/or agencies and non-government responders may work together throughout the incident to create and maintain an integrated response system. UIM may be established to overcome divisions from:

- Geographic boundaries,
- Government levels,
- Functional and/or statutory responsibilities, or
- Some combination of the above.

(Adapted from: U.S. Coast Guard Incident Management Handbook, U.S. Coast Guard COMDTPUB P3120.17, April 2001)

Unified, proactive incident management is accomplished through joint decision-making that establishes common incident objectives (i.e., management by objectives). During an incident, clearly delineated goals and objectives are agreed on and formally documented. These goals and objectives form the basis of the IAP. To accomplish this strategic guidance throughout an incident, unified management must entail:

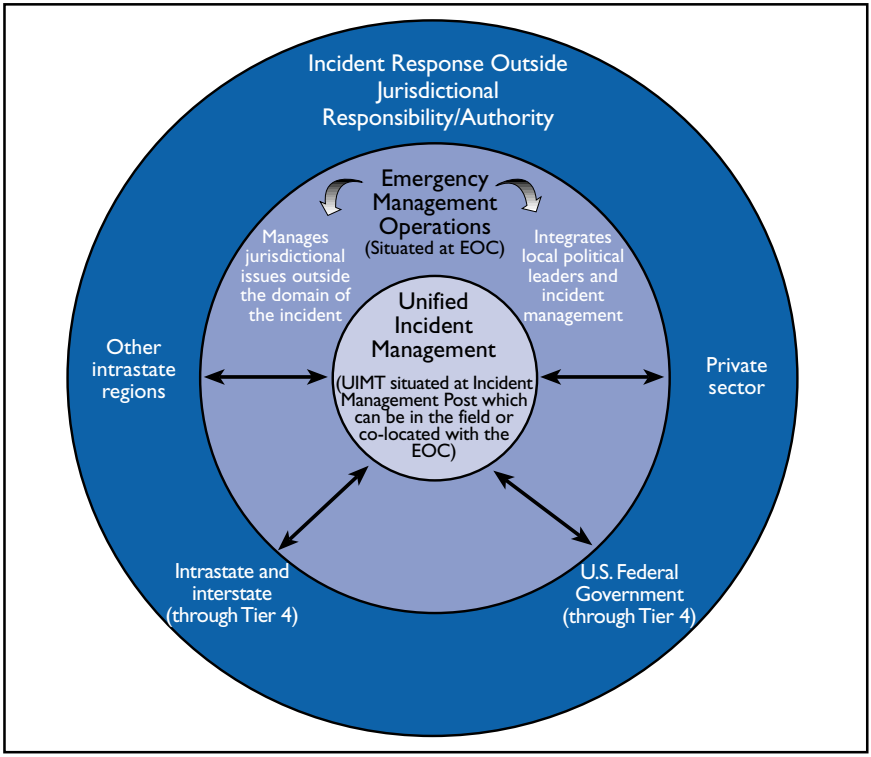
- A single integrated management structure for the emergency response;
- Shared or co-located management facilities;
- A single planning process and IAP (single set of goals and objectives); and
- A coordinated process for requesting and managing resources.

1.4.2 Incident Management Versus Incident Support

As previously described, Management and Operations are primarily supported by three *internal* (within IMS) sections: Logistics, Plans/Information, and Administration/Finance. However, in large-scale or complex events, incident management may require additional support from entities outside the responsibility/authority of IMS. For this to occur efficiently and with minimal administrative burden on incident responders, additional support must be established by the jurisdiction (Tier 3). This occurs through an Emergency Management Operations

Function that is usually based in an Emergency Operations Center (EOC) and supervised by the jurisdiction's emergency manager (Figure 1-6).

Figure 1-6. Relationship of UIM and Emergency Management Operations Support



During response, the Emergency Management Operations Function:

- Directly *supports* the UIMT by providing resources that are not available through incident-specific IMS capabilities. This includes coordinating assistance from outside resources (Federal, State, and other jurisdictions) that cannot be obtained through tactical mutual aid.
- Directly *manages* emergency issues related to the incident, but that are outside the scope of the incident as defined by the UIMT. This may be determined geographically (outside a scene perimeter) or functionally (beyond the scope of the UIMT objectives when no single scene exists or when the impact is diffuse). An example is provided in Exhibit 1-6.
- Provides integration between community political leaders and the incident managers.

Exhibit 1-6. Infectious Disease Outbreak Example

In the event of a widespread outbreak of SARS in a jurisdiction, the UIMT (with lead participation by public health and the acute-care medical community) would establish protocols to guide the medical evaluation and treatment of confirmed and suspected cases, and to address surge capacity needs. In addition, the UIMT would be responsible for limiting the spread of the disease (as defined by their action plan).

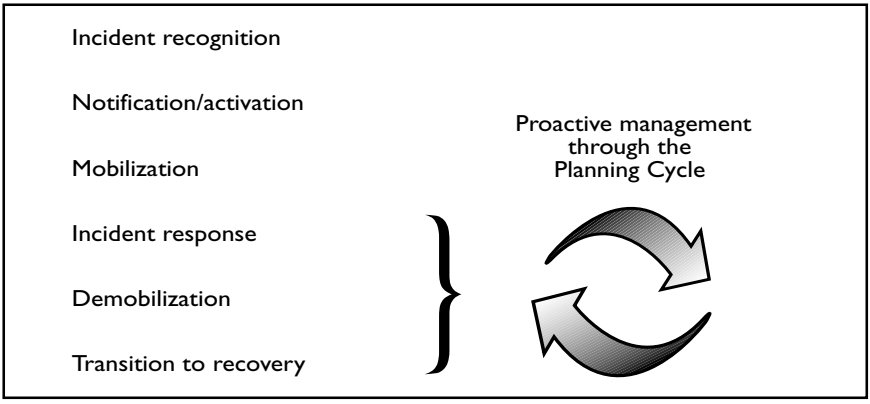
Addressing the needs of travelers stranded when mass transit is disrupted, addressing requests to minimize the effect of school or business closures, and other significant issues may be considered to be functionally outside the scope of the incident response system. The jurisdiction's EOC would manage these issues using its emergency management team and Emergency Support Functions (ESFs), or other task groups.

Because of its complex role, the EOC's organization and management processes must be well defined. Emergency management operations support should be physically separate from incident management activities, even if they are co-located in the same facility. This critical concept, which is not widely addressed by many medical and public health managers, ensures that the roles and responsibilities of each remain distinct.

1.5 Concept of Operations

The management process delineated in the MSCC Management System is best presented in relation to the various stages of incident response (Figure 1-7).

Figure 1-7. Stages of Incident Response



These stages provide the context in which to describe the critical actions that must occur at different times during incident response.

1.5.1 Incident Recognition

Incident recognition is the point in time when a response agency becomes aware that a significant event (i.e., one requiring emergency response beyond baseline operational capability) is imminent or occurring. This is not always obvious, particularly with the onset of an insidious infectious agent or chemical toxin. For example, one or two patients presenting to scattered HCFs with progressive paralysis indicating botulism may not be immediately recognized as a major public health problem until they are linked to a single toxin source. Because of this potential ambiguity, the process used to move from an early suspicion to recognizing that incident response is indicated should be carefully considered. Early convening of the jurisdiction's (Tier 3) UIMT, for example, may provide the necessary understanding of any health impact associated with an event, and it may clarify whether an event needs to be formally declared an emergency.

1.5.2 Notification/Activation

Notification/activation refers to the activities required to inform appropriate assets within the response system about an incident onset or an important change in incident parameters. "Notification" conveys critical details (if available) and an indication as to whether the notified asset should undertake response actions. Full activation of every response component under UIMT is often not necessary and, therefore, the activation request in each asset's notification message may vary depending on the type of event.

Many notification/activation categories and schemes have been promulgated. *Those selected for use should be consistent within tiers and easily understood across other tiers.* To further prevent confusion, the categories should be clearly defined on each communication. The Federal Urban Search and Rescue System (and other Federal agencies) have used one notification/activation categorization for over a decade because of its clarity and simplicity (Exhibit 1-7).

Exhibit 1-7. Federal Urban Search and Rescue Notification/Activation Categories

- **Advisory:** Provides urgent information about an unusual occurrence or threat of occurrence, but no significant action is recommended, requested, or required.
- **Alert:** Provides notification of an unusual occurrence where a response is anticipated or indicated. It provides guidance on the degree of action to take at the time of the alert. In some systems, an alert from a designated agency also authorizes the expenditure of a specific funding amount to address the costs of the requested pre-mobilization actions.
- **Activation:** May be either partial or full:
  - Partial: Specific components or assets within a unit are activated (all other components should receive notification regardless of their activation status).
  - Full: All resources commence response according to procedures described in the asset's EOP.

Other information is conveyed through "updates" during the course of the incident response.

Sources: Adapted from FEMA Urban Search and Rescue System; J. A. Barbera and A. G. Macintyre. *Jane's Mass Casualty Handbook: Hospital*; Jane's Information Group, Ltd., Surrey, UK, 2003.

The notification process should include a "confirmation of receipt" reply from the intended recipient. This reply should also contain a brief status report from the notified asset (using a standard format developed during preparedness planning) to allow immediate assessment of the response asset's capabilities.

1.5.3 Mobilization

Mobilization marks the transition from baseline operations to the response level designated in the notification. It may be triggered by a hazard that has already occurred, or it may result from a credible threat of an impending impact. Designating the response level enables an organization to execute specific actions delineated in its EOP for that level, such as providing contact information to ensure that the asset can integrate with other mobilizing response entities. For the mobilization process to function efficiently, each step must be clearly defined during preparedness planning and staff must learn the steps through training.

1.5.4 Incident Response

Incident response encompasses all efforts that directly address hazard impact. Two critical actions that should occur early during response are:

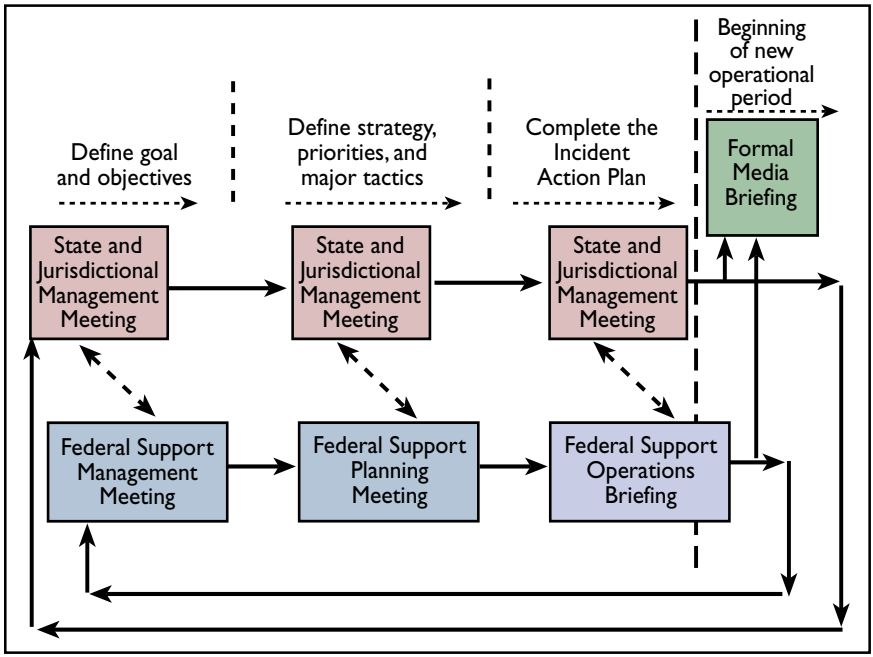
- *Establishment of incident management authority.* For certain types of incidents, the lead management authority and how management will be conducted are relatively straightforward (e.g., local fire service usually manages an explosion at a shopping mall). Management authority is more ambiguous in events that extend across jurisdictional boundaries or authorities (e.g., bombing at a Federal facility) or when the impact is diffuse (e.g., disease outbreak in multiple State jurisdictions). For most major incidents, tradition (and successful previous experience) dictates that jurisdictional authorities are responsible for incident management. For a diffuse impact scenario, State public health authorities (in a unified management model similar to "area command" described in NIMS) might assume the lead role in unified incident management and coordinate the incident response across the affected jurisdictions.
- *Establishment of Incident Management Post.* The site where the *primary* management team will function must be rapidly established and publicized across the response system. During any sudden onset or large-scale incident, several initial management sites are often established and operated by multiple disciplines from a range of MSCC tiers. The terminology used to designate them may not reflect their actual roles. Thus, identifying and publicizing the primary management site and how it integrates the other sites is a critical task in organizing incident-wide, proactive management.

When incident response involves multiple disciplines and levels of government, it becomes operationally important to synchronize, as much as possible, the planning activities of participants so that response actions can be coordinated (Figure 1-8). This promotes consistency across tiers in defining the incident objectives and follow-on tactics. It also ensures consistency in the development of public messages.

As Figure 1-8 shows, the planning cycles and operational periods for the jurisdiction (Tier 3) and State (Tier 4) are concurrent; those for the Federal response (Tier 6) are slightly staggered. This allows for information exchange during planning activities. The agency representative meeting enables the evolving action plan to be reviewed in time to identify conflicts before briefing the operational units. This meeting can be conducted face-to-face or via teleconference. A formal media briefing to

release incident details could occur after the agency representative meeting to ensure that responders are informed first and to promote a consistent message.

Figure 1-8. Coordination of Planning Activities



1.5.5 Demobilization

Demobilization refers to activities that focus on disengaging response resources as the incident objectives are met, transitioning remaining incident responsibilities to ongoing assets, and promoting rapid return of demobilized response resources to their normal function. There are several important considerations:

- *Demobilization across assets*. The timing of resource demobilization is a complex and difficult decision, with potentially competing priorities between incident managers and managers of individual assets. The managers of individual assets and agencies should always coordinate any decision with the overall incident management. Demobilization of individual assets may occur at widely varying times, with some taking place early in a response if objectives have been met.

- *Representing demobilization to the media and public.* Management of the public's perception of asset demobilization may be very important, depending on the incident and the asset (e.g., the public believing the event is not over, thus being dismayed that an asset is disengaging). This should be considered carefully and addressed through incident management processes, including public information action that seeks to demonstrate that the asset's objectives have been accomplished and it is no longer needed.
- *Continued use of IMS during demobilization.* For medical and health resources, demobilization (and initial recovery) must occur efficiently because medical backlogs created during response can present a significant risk to the asset's regular patient population (e.g., delays in performing cardiac catheterizations), as well as a financial risk (e.g., loss of revenue from elective surgery). The continued use of IMS processes may be beneficial in addressing backlogs and should be considered during planning for both individual asset and overall incident demobilization.

1.5.6 Recovery

Recovery refers to longer-term activities that extend beyond demobilization and other response activities. It includes the rehabilitation of personnel and equipment, resupply, and actions related to physical and financial restoration. Returning the overall system to its pre-incident state—the goal of the recovery stage—is addressed by developing and implementing strategic plans for full restoration and system improvement.

1.5.7 Post-Incident "Organizational Learning"

Post-incident "organizational learning" is achieved through a timely and objective after-action response critique that is designed to capture the positive aspects *and* the shortcomings of the response system. Findings should be documented in an outline format that can be organized on a spreadsheet and tracked. One basic format that has been widely successful is designed to capture, for each issue, a brief description of the issue, background information, recommendations, and follow-up actions. Improvements should focus on the EOP organization, processes, and

training or equipment/supply issues, rather than on individual personnel actions. The review should also examine how effectively each asset integrated into the overall system, as well as how the response tiers coordinated with each other. Indicated changes should be accomplished based on priority and incorporated into the appropriate documentation.

1.6 The Public-Private Divide

This chapter has presented several key concepts of IMS on which the MSCC Management System is based. A difficulty with applying traditional ICS in major medical incidents is that it is designed primarily for management participation by public safety personnel. It is difficult within ICS to identify defined mechanisms for incorporating private assets into incident management, even if they are essential in providing leadership-level expertise for the incident. This problem was apparent in New York City after September 11, where it was challenging to efficiently incorporate engineering deconstruction expertise (largely a private-sector asset) into incident management.[10] This issue is particularly problematic for medical input into incident management because specialty medical expertise in the United States resides primarily in the private sector.

The World Trade Center experience in the aftermath of September 11 demonstrated many factors that can exacerbate the public-private divide:

- Private assets may have conflict-of-interest issues when participating in public management.
- Public agency officials may be reluctant to accept high-level management advice because they may not be comfortable with the source's objectivity or expertise. This is more likely if in-depth familiarity was not established during preparedness planning.
- Private-sector assets do not have the liability immunity for public management that is enjoyed by public officials when acting within their established capacity. This may create a reluctance to engage in public decision-making without reliable assurance that they will not incur unacceptable legal risk.

[10]This observation was made by Dr. Joseph Barbera, George Washington University, who was present at the World Trade Center site in the days and weeks following the attacks.

Response systems for health and medical incidents must identify and implement methods to bridge the public-private divide. Depending on the type of incident, qualified medical experts may provide strategic advice through a formal position in UIM or as senior advisors to the UIMT. Alternatively, they may serve as technical specialists when their input is provided at a tactical level. Regardless of the approach, qualified medical experts must know when and how to interface with incident management (as they are rarely in charge of major response), and understand other implications of mass casualty or complex events. These experts should be selected from the medical community for their ability to accurately and fairly represent the collective interests of the private sector by providing:

- Advice as it relates to medical operations;
- Evaluation of management options for medical issues;
- Peer review of public messages for medical accuracy and clarity;
- Peer review of messages to the professional medical community to promote accuracy of the message and acceptance by participating medical responders; and
- Other assistance or expertise, as indicated.

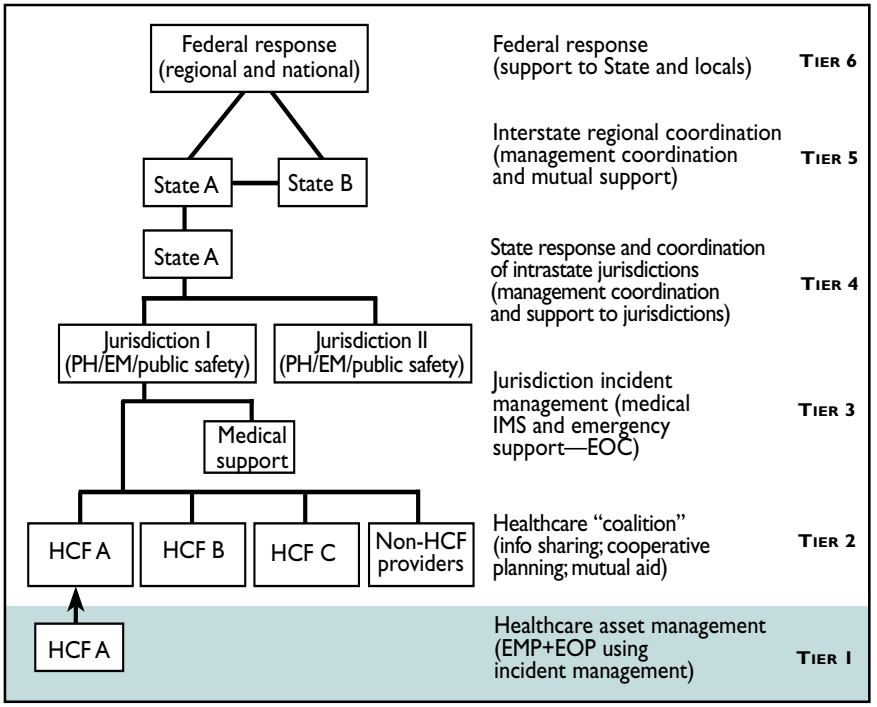
NOTES

NOTES

Chapter 2: Management of Individual Healthcare Assets (Tier 1)

Contents

Management of Individual Healthcare Assets (Tier 1)



Tier 1 is the primary site of hands-on medical evaluation and treatment. It includes hospitals, integrated healthcare systems, clinics, alternative care facilities, private practitioner offices, nursing homes with medical services, hospice, rehabilitation facilities, psychiatric and mental health facilities, and Emergency Medical Services (EMS).[1] The Medical Reserve Corps and State and Federal healthcare assets (e.g., Veterans Affairs Hospitals) that are co-located within a jurisdiction also fall into Tier 1 because they may become local assets for emergency response.

[1]EMS is not usually included in this category and is not a facility per se. In a major emergency or disaster, however, it may provide definitive medical care in the field and therefore should be integrated into Tier 1.

KEY POINTS OF THE CHAPTER

In a mass casualty or complex incident, the vast majority of medical care is provided at the local level in community hospitals, clinics, and private physician offices. The success of an incident response, therefore, depends in part on how well these healthcare facilities (HCFs)[2] are managed and their ability to coordinate with other response agencies.

The ability of an HCF to optimally manage its resources *and* to integrate with the larger response community is driven by its Emergency Management Program (EMP). The EMP includes all activities undertaken by the HCF to mitigate, prepare for, respond to, and recover from potential hazards. An integral component of the EMP is the Emergency Operations Plan (EOP), which defines the management structure and methodology to be used by an HCF during emergency response. The EOP is critically important because it also describes the management processes that enable the HCF to coordinate its actions with other responders.

The two Incident Management System (IMS) functions that facilitate cooperation among HCFs and integration with the larger response community are Incident Management and Plans/Information:

- ***Incident Management:*** As an incident unfolds, the HCF management team must rapidly transition from reactive to proactive management by establishing incident objectives and setting an overall strategy for response. Information will have to be obtained from both inside and outside the HCF to conduct adequate response planning. A defined management structure that specifies roles for HCF personnel facilitates internal organization and external integration.
- ***Plans/Information:*** The development of action plans and support plans allows the HCF management team to remain proactive, even as the incident parameters change. Likewise, a well-defined information function that is always operational (even if minimally during times of non-response) allows an HCF to process and disseminate vital incident-related data to divisions within the HCF and to outside responders. This promotes coordination with other entities and consistency across the response system.

[2]In this document, an HCF is any hospital, integrated healthcare system, private physician office, clinic, alternative care facility, or other resource that may provide point-of-service medical care.

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2.1 The Role of the HCF in MSCC

Patient evaluation and care in emergencies or disasters is provided primarily at community-based hospitals, integrated healthcare systems, private physician offices, and other point-of-service medical facilities. These assets, therefore, must be centrally involved in the development of MSCC strategies. To maximize overall MSCC, efforts must extend beyond optimizing internal HCF operations and focus on integrating individual HCFs with each other and with non-medical organizations. Such integration ensures that decisions affecting all aspects of the community response are made with direct input from medical practitioners, thus establishing medical care, *along its continuum*, as an essential component of incident management.[3] This chapter examines management processes that effectively integrate HCFs into the larger response community. ***It is not intended to describe a comprehensive internal management system for individual HCFs.***[4]

2.2 HCF Emergency Management Program

To adequately provide MSCC, individual HCFs must have a comprehensive EMP that addresses mitigation, preparedness, response, and recovery activities for major medical incidents. A valid hazard and vulnerability analysis (HVA) forms the cornerstone of the EMP. The HVA is conducted by HCFs to define and prioritize a strategy for mitigation and preparedness based on the perceived risk posed by potential hazards to a facility (Exhibit 2-1).

[3] In contrast, the traditional Incident Command System (ICS) model assumes that incident management is no longer responsible for patients once EMS transports patients to HCFs.

[4] Many other descriptions exist for individual HCF management, including the *Hospital Emergency Incident Command System (HEICS),* available at http://www.emsa.ca.gov/, and *Jane's Mass Casualty Handbook: Hospital,* available at http://security.janes.com/public_safety.

Exhibit 2-1. Hazard and Vulnerability Analysis (HVA)

The primary objective of an HVA is to identify hazards and the susceptibility to hazard impacts, and to prioritize mitigation and preparedness initiatives. Many models and guides are available to develop an HVA, but the critical components may be accomplished through the following steps:

- ***Hazard identification***. Identify and list, by type, all hazards that could affect the location or asset of interest, and the relative likelihood of each hazard's occurrence ("threat").
- ***Vulnerability determination***. For each hazard, develop an assessment of both the community and the response system's susceptibility to the hazard impact. For MSCC, this includes:
  - The community vulnerability in terms of potential post-impact health and medical needs of the population; and
  - The medical response system's vulnerability to each hazard (both the vulnerability of the system's baseline operations and its ability to surge).
- ***Analysis of the vulnerabilities***. Use a systems-based approach to:
  - Break down each vulnerability into its key components;
  - Identify components that are common across multiple hazards;
  - Identify issues that create extremely high-stakes weaknesses; and
  - Compare relative cost-benefit ratios between the many possible mitigation and preparedness interventions.

While no HVA instrument can provide precise stratification of hazard threat and vulnerability for an asset or community, the HVA exercise should provide a *basis for developing priorities* among the many options that can reduce risk and enhance preparedness. If approached in this fashion, the HVA has maximum applicability to an EMP. In addition to guiding internal HCF mitigation and preparedness, the HVA fosters relationships with other local HCFs (Tier 2), with jurisdictional authorities (Tier 3), and with non-health-related organizations by highlighting common threats facing them (Exhibit 2-2).

Exhibit 2-2. Developing Relationships with Non-Health-Related Organizations

Universities and other educational facilities may find it beneficial to address some aspects of preparedness planning in partnership with a nearby HCF. Because the threats they face may be similar, each should understand the other's vulnerability in order to effectively plan. For example, the HCF should have a sense of the number of students and staff that might be affected by identified hazards, and the university should know the patient-receiving capacity of the HCF so that it can plan for additional resources if necessary. This relationship can extend to the preparedness phase, with each organization's strengths offered to help address the other's vulnerabilities. The university may provide housing and temporary staging facilities for HCF evacuation, whereas the HCF's patient tracking and family assistance mechanisms may be used to rapidly inform the university of the location and status of students transported there for care (a significant area of university vulnerability in meeting parental expectations).

Senior HCF managers have ultimate responsibility for the development, implementation, and maintenance of their institution's EMP, and often appoint an emergency management coordinator to perform EMP activities.[5] In addition, an EMP committee composed of senior-level representatives from major departments within an HCF is usually established to review all EMP-related work and to provide expert input into the development of the HCF's EOP. The following are brief descriptions of key activities in the four phases of the EMP that promote integration with the larger response community.

2.2.1 Mitigation

Mitigation is the process of planning for and implementing measures to prevent the occurrence of potential hazards. It also includes actions undertaken to minimize the impact of a hazard should one occur. It is advantageous to collaborate with other HCFs and with non-medical responders when identifying mitigation activities, as this (1) may help uncover hazards and vulnerabilities that the individual HCF might not otherwise consider and (2) allows for sharing of best practices or other solutions. Examples of mitigation activities include:

[5] J. A. Barbera and A. G. Macintyre. *Jane's Mass Casualty Handbook: Hospital*. Surrey, UK: Jane's Information Group, Ltd., 2003.

- Designing and constructing HCFs to avoid or minimize potential hazards (e.g., build electrical systems above ground level in flood-prone areas);
- Confining internal hazards, such as hazardous materials, in safe and secure areas to prevent their release during an internal event (e.g., a fire);
- Developing redundancy in hospital operating systems to ensure backup capability during an emergency. Backup systems should be evaluated for their vulnerability to hazards, particularly those most likely to affect primary systems;
- Protecting communication systems (both internal and external) and computer infrastructure from accidental or deliberate disruption; and
- Establishing programs for testing, inspection, and preventive maintenance of backup systems and facility safety features.

2.2.2 Preparedness

Preparedness activities are undertaken to build capacity and capability within an HCF so that it can meet potential patient and staff needs that arise after a hazard impact. Preparedness centers on having an effective EOP in place that:

- Describes a well-defined management structure for emergency response;
- Assigns important roles and responsibilities to the HCF incident management team and general staff during response;
- Provides mechanisms to facilitate interfacility cooperation and integration into the community response (e.g., development of standardized data collection and information sharing protocols);
- Describes processes for requesting and receiving mutual aid, or for providing support to other HCFs whose operational thresholds have been exceeded; and
- Establishes mechanisms to conduct and evaluate semi-annual emergency response exercises.

Regular meetings of the EMP committee should be conducted as part of preparedness activities, and there should be an annual evaluation (and revision, if necessary) of the EOP. In addition, preparedness includes all training, drills, and exercises that are performed to stress and evaluate the HCF EOP. These activities are best performed in conjunction with other HCFs (Tier 2) or the jurisdiction (Tier 3) to enhance their integration.

2.2.3 Response

Response actions address a specific hazard impact that has occurred (or an impending impact, such as a hurricane or tornado) and are guided by the HCF EOP. The primary goals of response actions are to:

- Prevent or limit the extent of a hazard impact on HCF staff, patients, and operations (e.g., proper isolation/quarantine measures);
- Maximize patient and population resistance to a hazard *after* exposure (e.g., administration of appropriate vaccination or medication prophylaxis); and
- Promote healing of incident victims and the general population from a hazard impact (e.g., provision of definitive care, rehabilitation and mental health services).

While these goals should be universal to all HCFs during response, objectives and strategies to achieve these goals may vary. It is important that differing response strategies among HCFs are coordinated (or at least clearly communicated to individual HCFs) through a collective response planning process (see Tier 2).

2.2.4 Recovery

The activities of the recovery phase seek to return response personnel and the HCF to normal operations as quickly as possible. Recovery efforts should include a thorough evaluation of how the response system performed under stress, making note of specific strengths, weaknesses, and strategies to improve the HCF's ability to respond to future emergencies and disasters. Other important recovery activities include:

- Accounting accurately for all costs incurred by the HCF as a result of a response, and applying for financial remuneration of those costs;
- Attending to acute and long-term physical and mental health effects incurred by HCF staff during response (e.g., providing counseling services);
- Replacing or servicing equipment and supplies used during response; and
- Evaluating, cleaning, and/or repairing damage to the facility.

Recovery activities should be coordinated with other tiers. Moreover, it is critical that each HCF report to the designated jurisdictional (Tier 3) incident management authority when its recovery is complete and the facility has returned to normal operations.

2.3 HCF Emergency Operations Plan

In the past, the HCF EOP was commonly (and inaccurately) referred to as the disaster plan. Fortunately, this has begun to change as the EOP evolves into a guide to address less overwhelming emergencies and hazard threats. For early response activities, the EOP uses operational checklists (or job action sheets) for designated functions. Later stages of response, and initial stages of recovery, should be addressed by a proactive management method that emphasizes documentation of response objectives, strategies, and specific tactics. Exhibit 2-3 highlights key components of the HCF EOP.

Exhibit 2-3. Key Components of the HCF EOP

- The management structure and *methodology* that will be used in an emergency, including the organization and operation of the internal HCF Incident Management Post (IMP). This should be easily identifiable to external coordinating agencies.
- General organizational descriptions of Operations, Plans/Information, Logistics, and Administration/Finance sections, which personnel perform them, and the processes/procedures to be used.
- Essential activities to be performed during each stage of emergency response. These activities should be coordinated with other HCFs (through Tier 2) and with jurisdictional incident management (Tier 3) to maximize MSCC across the system.
- Methods for adequately processing and disseminating information during an emergency, including names and contact information for external liaisons and contacts at other HCFs and the jurisdictional level (Tier 3).
- Processes to promote continuity of HCF operations, including patient care, business continuity, and pre-identified sources for external support (e.g., mutual aid partner facilities).
- Guidance on how to develop and release public messages during emergencies, including coordination with the jurisdiction (Tier 3) public information function.
- Guidance for very unusual hazards or for special circumstances, such as hospital evacuation or "shelter in place." Typically addressed in annexes to the EOP, this guidance should use the same processes established for other emergencies.

It is important to recognize that many private physician offices, neighborhood clinics, and other "smaller" Tier 1 assets do not have the management infrastructure or personnel necessary to establish complex processes for incident preparedness and response. However, these entities may find themselves, during a major incident, compelled to participate in the community response beyond simply referring patients to a hospital or closing down their clinical operations. This is because:

- Victims often seek medical care in settings they are familiar with, such as a personal physician's office;
- When medical surge demands severely challenge hospitals, patients may seek care at alternative facilities;
- Some victims' treatment requirements may be adequately managed in these smaller settings; and
- Certain events, such as a biological agent release, may be prolonged in duration and generate patients that can be safely evaluated in these settings, thus relieving some of the burden on larger HCFs.

The approach to emergency preparedness and response for these so-called smaller Tier 1 assets can be relatively simple. They may elect to integrate with each other and with the community response in one of two ways:

- Associate with a larger Tier 1 organization (e.g., hospital, integrated healthcare system, large outpatient facility) where they have privileges, or with a local professional medical society. The *organizing body* must have the ability to manage ongoing EMP activities and, during response, to perform incident management processes, such as action planning and disseminating information to its participants.
- Participate in at least the information processing function of the incident management system. For this to occur, the smaller Tier 1 asset must know where to obtain authoritative information and where to report information.

- Obtaining information:
  - Where to obtain information on personal protection and other incident-specific safety measures for practitioners, their staff, and patients.
  - Where to obtain reliable incident information that allows anticipation of medical needs, such as unusual patient treatment requirements.
  - Where to obtain guidance on the specific medical evaluation of incident cases, such as the availability of confirmatory lab tests and the test limitations.
  - Where to obtain pertinent information on populations at risk (e.g., for a biological event, understanding the community-wide approach to risk stratification for potentially exposed patients).
  - Where to obtain information on whether public health emergency powers have been invoked, allowing release of private patient information, and other deviations from standard medical practice.
- Reporting information:
  - Where to send reports and what information to transmit on patients who have been evaluated or treated at the practitioner's location. This helps jurisdictional authorities (Tier 3) determine the size and scope of the event.

2.4 INTEGRATION WITH OTHER TIERS

The comprehensive EMP should establish processes that enable the HCF to coordinate and integrate with other response entities. This helps the HCF adequately provide MSCC and becomes critically important when an asset is severely challenged and must seek external assistance.

Exhibit 2-4. Effective Interface Between Tier 1 and Other Tiers

Why is it important for individual health and medical assets to have an effective interface with other tiers?

Consider the scenario of a bombing incident with large numbers of casualties. Patients may self-refer or be transported by official jurisdictional assets to multiple treatment locations. This occurred after the Pentagon attack on September 11, as patients were transported to hospitals around the region and others self-referred to hospitals and at least two clinics (one of which was in the Pentagon). Having individual HCFs effectively integrated with other tiers will facilitate:

- Patient tracking: location of individual patients within a community's medical system.
- Tracking the status of healthcare assets to determine:
  - HCFs with large numbers of casualties that require outside support and diversion of additional patients;
  - Individual assets that may be available to assist other HCFs; and
  - HCFs that can accept additional patients.
- Notification of response actions that could affect an individual asset's operations, such as street closures that limit a facility's ability to get personnel to work.

The two major functional areas that facilitate cooperation among HCFs and integration of individual HCFs with non-medical responders at the jurisdiction (Tier 3) level are Incident Management and Plans/Information.

2.4.1 Incident Management

There must be a clearly defined and tested management structure in place within an HCF in order for the facility to coordinate externally with other response entities. As an incident unfolds and details begin to emerge, the HCF incident management team should quickly transition from reactive to proactive management; this is best accomplished by establishing objectives for the response. These objectives should be defined and documented through *incident planning*—a process in which the incident management team outlines a response strategy and specific actions for the HCF. The result is often a formal action plan (AP) for the facility.[6]

[6]A more detailed description of action plans, including an example of a hospital AP, is provided in Appendix C.

The AP should be shared with HCF staff so that they understand the "larger picture" of what is happening and how their facility is responding. The AP should also be shared *externally* with other local HCFs and with jurisdictional authorities (Tier 3) to enhance their understanding of the event, the response parameters, and the status of the HCF. Because some facilities may be reluctant to share their APs due to concerns about proprietary information, critical components (e.g., event updates, resource availability, safety and communication plans) can be isolated from internal, more sensitive material. The latter may be designated as an internal support plan to the EOP and not distributed externally.

Under Incident Management are multiple subfunctions that help integrate individual HCFs with other responders:

- ***Safety:*** Recommendations for staff safety during emergency response should be standardized, if possible, across the healthcare coalition (Tier 2) and the jurisdiction (Tier 3). They should also carry the affirmation of the jurisdiction's public health authority. This includes traditional workplace safety (e.g., everyday precautions), preventive medical/health safety (e.g., vaccination prophylaxis), and security safety. Guidance should allow for variations among HCFs based on incident circumstances; however, differences should be identified and explained to patients and staff.
- ***Senior Liaison:*** The senior liaison shares information and knowledge with other response leaders outside the HCF to determine the best available strategy, set priorities, and identify major actions for the HCF management team. Ideally, this is accomplished through Tier 2 activities (e.g., conference calls or disseminated written materials) where information is shared among all HCFs. The liaison should participate in HCF management decisions to ensure that objectives from outside the HCF are considered. This position should be distinguished from operational-level liaisons that focus on tactical issues (e.g., the liaison between the emergency department and EMS units).
- ***Senior Advisor:*** The senior advisor position allows expert input to the HCF management team on medical issues that are directly relevant to *strategic* decision-making (e.g., provides knowledge about the stages of treatment for burn casualties so management may anticipate what resources will be needed at each stage). This helps the management team determine support needs that might have to be requested

through mutual aid. The role of the senior advisor differs from that of the technical specialist, who advises the general staff on tactical issues related to patient care (e.g., specific medical and nursing procedures, medications, and other interventions).

- ***Public Information:*** This subfunction promotes an accurate and consistent message across tiers by coordinating any information transmitted to the public and the media with the message developed at the jurisdiction level (Tier 3). Information released by the HCF should focus specifically on the situation at the HCF and its operations, training, and preparedness. It should not conflict with Tier 3 public messages, nor should it speculate on strategy beyond the HCF.

2.4.2 Plans/Information

The Plans/Information function plays a critical role because of its involvement in developing action plans for the HCF. When shared with other local HCFs (through Tier 2) and jurisdictional (Tier 3) authorities, the HCF AP provides strategic information to help coordinate response efforts, and may give advance warning if mutual aid support will be necessary. For example, a strategy outlined in an HCF AP to vaccinate staff enables other organizations to decide whether they want to proceed similarly. Even if uniform measures are not adopted across a jurisdiction, this knowledge allows HCFs to reassure their staff and the public as to why they elected a particular course of action. In addition, HCFs use long-range planning to predict extended resource needs (e.g., supplies, personnel), and contingency planning to identify alternative response actions should incident parameters change. Both long-range and contingency planning will necessarily involve close integration with organizations external to the HCF.

Information from other local health and medical assets will be critical to allow optimal coordination and operation of internal HCF divisions. By operating a well-established information management function at baseline, HCFs can receive the earliest reports of an event and immediately begin processing and distributing information within the facility and externally. Similarly, data generated by an HCF (e.g., number of emergency department visits) may provide first warning of an impending crisis and can be quickly sent to other HCFs, jurisdictional emergency managers, and public health officials to establish incident parameters (Exhibit 2-5).

Exhibit 2-5. Importance of Managing HCF Information

Information on the numbers of patients seeking care in the emergency department for potential exposure to anthrax can be important to the HCF for both internal and external reasons. HCF managers could use this information to determine if objectives are being accomplished, to anticipate staffing needs for the next operational period, and to determine the need for external assistance. The data might also be analyzed for operational relevance (e.g., did patient concerns about potential exposure arise from a lack of information from jurisdictional incident management?). Similarly, it is important to transmit this information (through the HCF's senior liaison) to jurisdictional (Tier 3) incident management. Both the absolute numbers and the analysis that patients presented because of a lack of jurisdiction information would be important for Tier 3 in analyzing the effectiveness of their strategy and tactics.

An important part of information management is deciding who does *not* need specific information. In this example, regular inpatient units may not require detailed information about emergency department operations. Instead, a brief status report indicating the number of patients evaluated and discharged in the emergency department may give inpatient staff an adequate sense of what is occurring without providing overly detailed information.

Provided below are several mechanisms to promote HCF integration with other tiers through an adequate information management function:

- Establish regular reporting intervals that synchronize with the operational periods of Tier 2 (preferable) or Tier 3.
- Determine early in response *where, how, and in what format* to transmit situation assessments, resource updates, action plans, and other information for further aggregation and analysis.
- Provide to external response entities situation assessments and resource status updates for the HCF. This can be easily accomplished by sharing the HCF AP that includes a list of event-generated patients.
- Obtain from public health authorities recommendations on prophylaxis or evaluation of potentially exposed individuals, or other pertinent information (e.g., global situation status reports from Tier 3).
- Ensure that reliable and redundant systems are in place to accurately track, account for, and report on incident victims. Beyond just tracking patients in the HCF, the system must also reliably determine that a missing person is definitely *not* under the HCF's care.

- Maintain an information function that is always operational, even if minimally in times of non-response. This allows for a smoother ramp-up in operations during the initial phases of an event. It also enables information that is important for EMP activities to be relayed during times of non-response (e.g., jurisdictional drill information, upcoming event announcements).

2.5 Illustrative Example

The following example demonstrates how the concepts presented in this chapter may be applied during an actual incident response. The various phases of response (as described in Chapter 1) highlight when critical actions should occur; however, the example extends only as far as incident response, as this is the focus of the MSCC Management System.

Background and Incident Description

- Green Hospital is one of several HCFs located in a jurisdiction. It is a moderate-size community hospital and level-2 trauma center.
- Highly refined anthrax has been mailed to City Hall in a package with an air-powered dispersal device that activates as the package is opened in a clerk's office.
- 911 is called. Fire/HAZMAT arrives promptly and observes that the powder is "very fine." Immediate field tests (recognized to have high false-positive rates) performed by HAZMAT are positive for anthrax. HAZMAT/EMS contacts the City Department of Health (DoH) for assistance. More definitive laboratory studies are pending.
- Many City Hall workers were in the immediate vicinity of the opened package. Because of the building's ventilation system, others in nearby sections of the building are considered exposed. Several potentially exposed people have left the scene.

Incident recognition for Green Hospital occurs when the HAZMAT chief contacts all jurisdictional hospitals through a common emergency communications channel. Hospitals are warned to decontaminate all patients thought to be exposed to the powder. At about the same time, hospital staff receives early media reports on the discovery of a powder at City Hall. A subsequent broadcast from DoH (Tier 3) to HCFs announces a teleconference that has been scheduled to provide local hospitals with more details about the incident.

Notification/activation begins when administrators at Green Hospital rapidly contact the hospital's Director of Safety (Chair of the EMP Committee) and the Director of the Emergency Department (ED). They agree that a partial activation of Green Hospital's EOP is warranted. This provides enhanced systems to integrate Green Hospital with other response agencies, focuses attention on perimeter management, and increases support to the ED, while minimizing impact on such areas as outpatient surgery. A notice of partial EOP activation is disseminated to hospital staff and internal departments. The hospital also notifies its emergency coalition partners (Tier 2) and DoH (Tier 3) of its partial EOP activation and provides each with a current status report.

Mobilization activities at Green Hospital include setting up its decontamination capability, implementing and staffing the hospital's Incident Management Post (IMP), and directing support to the ED. Important points of contact at the IMP are provided to Tier 2 and Tier 3 partners.

Response is initiated as potentially exposed patients arrive at Green Hospital. A teleconference is conducted between jurisdictional hospitals and DoH so that known incident information can be provided to all hospitals simultaneously:

- Responders are treating the threat as very real and decontaminating all victims who remain at the scene.
- Investigation is under way to determine if human exposures occurred at "upstream" postal facilities.
- HAZMAT/DoH provide tentative case definitions for anthrax exposure (confirmed, probable, unlikely).
- Initial evaluation and treatment information is disseminated, which includes:

- Recommendation to decontaminate patients who meet the case definition for anthrax exposure. The hospital's decontamination team is given the case definition and risk profiling information, which it uses to determine who needs to undergo decontamination;
- Recommendation for Personal Protective Equipment (PPE) for staff receiving and evaluating patients prior to decontamination;
- Initial description of patient demographics that should be considered in categorizing patients for exposure; and
- Recommendation for antibiotic prophylaxis and initial treatment. A clinical team from Green Hospital (composed of an emergency physician, infectious disease specialist, infection control nurse) uses this information to develop an initial patient evaluation protocol and prophylactic medication regimen for patients at Green Hospital.

During the initial teleconference, DoH establishes the methods hospitals should use to report cases (all types), including how to format reports and where to send them. A request is made for an initial status report from each hospital to be submitted within two hours. The report should contain a situation update specifying the number of patients that meet the case definition for exposure, and a resource update noting operational problems encountered by the hospital.

Green Hospital's Incident Management Team (IMT) initiates a proactive response planning process and develops a formal AP. An operational period of 12 hours is established in conjunction with the operational period being used by the jurisdiction's management team (Tier 3). Green Hospital's IMT conducts management and planning meetings, and its IMS Plans/Information function works to document the hospital's AP. In addition, the Plans/Information function:

- Submits the hospital's AP to the Tier 2 coalition communications center ("clearinghouse" function). Action plans from each hospital are shared with each other through this route, and submitted to jurisdiction incident management (Tier 3) through DoH.
- Tracks incident-related cases within Green Hospital, with information formatted for situation updates and for use by hospital management personnel to assess the hospital's response effectiveness in achieving its incident objectives.

- Provides information to Green Hospital's public information officer (PIO) to use in developing an initial statement for the media. The statement focuses on Green Hospital's response actions. The hospital PIO coordinates the public statements with the jurisdiction's (Tier 3) PIO.
- Manages strategic information provided by the hospital's liaison to the Tier 2 coalition and to jurisdiction incident management (Tier 3).
- Disseminates appropriate information internally, including the hospital's current AP, which is sent to department managers before the start of each operational period.

Staff members that developed the patient evaluation and treatment protocols represent Green Hospital on a subsequent teleconference with representatives from other HCFs and DoH. The protocols of each HCF are compared, and a standardized protocol is established for the jurisdiction. In this way, the response at Green Hospital evolves in coordination with the other HCFs (Tier 2) and jurisdictional authorities (Tier 3). Green Hospital incorporates the standardized evaluation and treatment protocol into its updated AP. During each subsequent operational period, Green Hospital adjusts its AP to reflect new event parameters, such as:

- Revised or new objectives and strategies;
- Changes in how the "at-risk" population is defined, as well as other changes to the evaluation and treatment protocols; and
- New information about the anthrax agent if it is altered from its usual characteristics (e.g., resistance to a particular antibiotic).

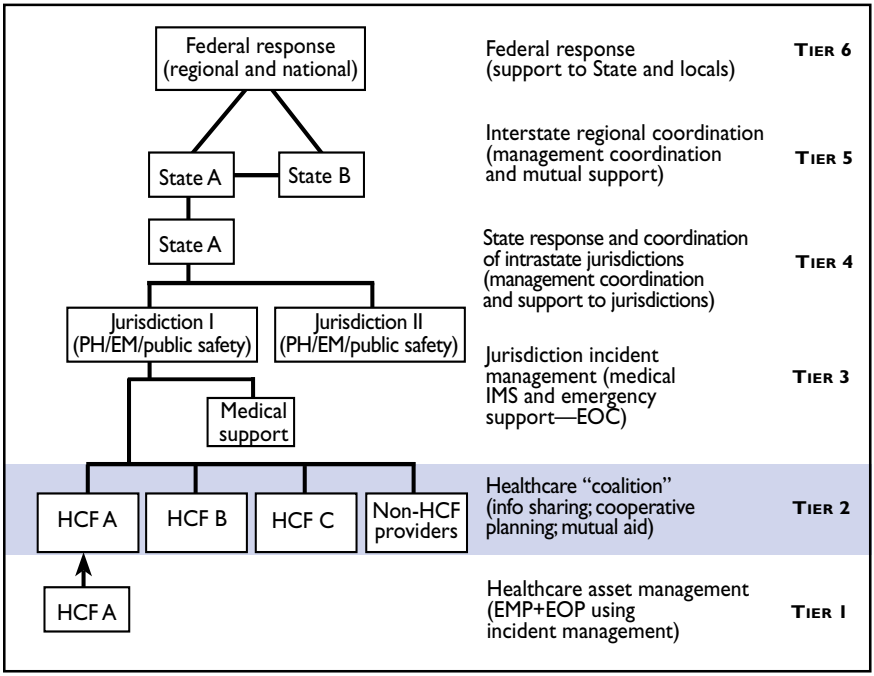
NOTES

NOTES

Chapter 3: Management of the Healthcare Coalition (Tier 2)

Contents

Management of the Healthcare Coalition (Tier 2)



The healthcare coalition (Tier 2) is composed of healthcare facilities (HCFs) and other healthcare assets described in Tier 1 that form a single functional entity to maximize MSCC in a defined geographic area. It coordinates the mitigation, preparedness, response, and recovery actions of medical and health providers, facilitates mutual aid support, and serves as a unified platform for medical input to jurisdictional authorities (Tier 3).

KEY POINTS OF THE CHAPTER

In a mass casualty or complex incident, HCFs[1] may lack the necessary resources and/or information to individually provide adequate MSCC. The healthcare coalition (Tier 2) attempts to maximize MSCC by coordinating mitigation, preparedness, response, and recovery activities among *all medical and health assets* in a jurisdiction. This allows existing medical and health resources in the public and private sectors to be optimally leveraged, and it promotes interfacility cooperation and support. Tier 2 also promotes coordination with jurisdictional authorities (Tier 3) by providing a unified platform for medical and health asset integration into the community response.

The healthcare coalition (Tier 2) emphasizes *coordination and cooperative planning* rather than a truly "unified management" of all public and private medical and health assets. This is because health and medical assets retain their individual management autonomy during incident response, but participate in information sharing and incident planning to promote consistent management strategies. The management organization and decision process of Tier 2, therefore, is less structured than in Tiers 1 and 3 since decision authority resides primarily at the level of each HCF. Rather than "commanding" HCFs, Tier 2 brings them together to collaborate on strategic issues and to coordinate incident planning, response, and recovery activities. Ideally, these efforts are closely integrated with the jurisdiction's (Tier 3) preparedness planning and response activities.

The function in Tier 2 that collects, processes, and disseminates data and information is referred to as a "clearinghouse function." It ensures that all HCFs have the information they need to adequately prepare for and respond to major events. This information exchange builds consistency in response activities and in the public message. It also allows the Tier 2 coalition to effectively integrate with non-medical responders at the jurisdiction level (Tier 3) by providing timely and accurate "snapshots," or composite updates of local HCF operations.

An integral component of the coalition response is medical mutual aid—the redistribution of personnel, facilities, equipment, or supplies to HCFs in need during times of crisis. Mutual aid provides surge capacity and capability that is immediately operational, reliable, and cost-effective.

[1]In this document, an HCF is any hospital, integrated healthcare system, private physician office, clinic, alternative care facility, or other resource that may provide point-of-service medical care.

The Tier 2 coalition provides a mechanism to formally establish processes for requesting and receiving mutual aid during preparedness planning. It also allows such issues as staff credentialing, liability, reimbursement, and transfer of patient responsibility to be addressed in preparedness planning, thus ensuring a rapid distribution of aid when it is needed.

3.1 The Role of the Healthcare Coalition in MSCC

Research has shown that most individual HCFs possess limited surge supplies, personnel, and equipment, and that vendors or anticipated "backup systems" for these critical assets are often shared among local and regional HCFs [1, 2]. This "double counting" of resources diminishes the ability to meet individually projected surge demands across multiple institutions during a medical emergency.[2] To address this, the healthcare coalition (Tier 2) integrates *all medical and health assets* in a jurisdiction to coordinate their mitigation, preparedness, response, and recovery activities. In this way, HCFs work together to maximize MSCC rather than compete against one another for limited resources.

Much of the benefit gained from the healthcare coalition is evident in participant HCFs' Emergency Management Programs (EMPs) well before a major event occurs. Joint planning and preparedness efforts with geographically related facilities are possible, even though the HCFs may normally be business competitors. Areas of mutual benefit include:

- Distributing the mitigation and preparedness workload among facilities, since many of the solutions found during preparedness planning may be applicable to multiple HCFs in a jurisdiction;
- Establishing familiarity and trust among HCFs that promote cohesive response actions during an emergency;
- Fulfilling regulatory requirements for community emergency planning and for establishing and testing management systems that blend into the jurisdiction (Tier 3) response (as required by JCAHO and other accrediting organizations); and
- Promoting close integration with jurisdictional (Tier 3) authorities for mitigation and preparedness planning, and for pre-planning of scheduled unusual events, such as mass gatherings (e.g., fireworks display) or high-security events (e.g., political demonstrations).

During incident response, coalition participants benefit through cooperative planning, information sharing, and management coordination. As surge demands challenge individual HCFs, the coalition facilitates mutual aid assistance through arrangements with nearby facilities. Mutual aid is a timely, cost-effective, and reliable method to obtain added surge capacity and capability (via equipment, facilities, supplies, and personnel) that is immediately operational. It distributes health and medical assets to areas of greatest need, thereby enhancing overall jurisdictional MSCC.

[2] The issue of "double counting" also highlights the importance of including members of the HCF supply chain (pharmaceutical companies, equipment vendors, etc.) in preparedness planning.

3.2 THE COALITION EMERGENCY MANAGEMENT PROGRAM

The backbone of the healthcare coalition (Tier 2) is a comprehensive EMP that *formally* defines the mitigation, preparedness, response, and recovery efforts of participating HCFs. The preparedness and response architecture of the coalition EMP differs significantly from that found in individual HCFs (Tier 1) and at the jurisdiction level (Tier 3). For example, the Tier 2 leadership during an emergency or disaster response does not have an incident manager's decision authority for the coalition. Instead, the leadership acts to ensure optimal coordination and information sharing among participants.

Several important considerations for the coalition EMP include:

- Establish an emergency management committee that includes representatives of each participating facility. These individuals should be knowledgeable in their respective organization's EMP and Emergency Operations Plan (EOP).
- Address relevant issues related to mitigation, preparedness, response, and recovery. An example would be clearly defining the processes for how the Tier 2 leadership will be designated during an event response, or identifying how decisions will be made on issues that affect all coalition participants.
- Develop formal processes to administer the coalition EMP and to conduct emergency management committee meetings:
  - The committee should meet regularly (at least once a month during startup and at times of high threat, or immediately after a response to receive input from all participants).
  - An agenda should be distributed to participants before all meetings, and minutes should be recorded for future reference.
  - An official vote should be taken to decide issues that affect all members.
  - Meeting locations may be rotated among participating HCFs to promote familiarity with other response plans, to encourage sharing of best practices, and to distribute costs.
- Involve jurisdictional (Tier 3) authorities (e.g., EMS, public safety, emergency management, public health) in Tier 2 proceedings to ensure a close partnership between Tiers 2 and 3. Similarly, a Tier 2 liaison should participate in jurisdictional preparedness meetings and represent the Tier 2 coalition in the jurisdiction's EOC and (ideally) within the Tier 3 incident management team (if one exists separate from the EOC).

The coalition EMP should be sponsored by an established entity that can provide the administrative infrastructure (clerical support, meeting space, etc.) for the EMP. This "sponsor" must promote equal participation among member HCFs and should not convey a competitive business advantage to any coalition member. Potential sponsors may include local hospital associations, local or regional EMS councils, and Local Emergency Planning Committees (LEPCs).[3] It is important for the coalition to retain the responsibility and authority for the Tier 2 response infrastructure. This helps to maintain the private-sector perspective and ensures that the coalition has priority access to resources (e.g., radio, telecommunications) during response (Exhibit 3-1).

Exhibit 3-1. HCF Control of Tier 2 Response Infrastructure

Early in the development of the Washington, DC Hospital Association-based Hospital Mutual Aid System (HMAS), the District Government generously offered the use of its 800-megahertz radio system and the Mayor's conference-call resource to hospitals for use in times of crisis. HMAS participants declined, recognizing the need to establish communications to which HCFs always had primary access, regardless of the evolving circumstances. The HMAS low-tech radio system worked exceptionally well on September 11, when other radios were committed or overwhelmed. The privately established conference-call service also worked well during subsequent weeks of the September 11 recovery effort and the anthrax crisis [3].

3.3 The Coalition Emergency Operations Plan

Similar to individual HCFs, the coalition (Tier 2) has an EOP that guides actions during response. However, the Tier 2 EOP emphasizes *coordination* rather than *management* of individual assets. This reflects the fact that HCFs retain their management autonomy during a response, while they collaborate with other medical assets to strengthen overall MSCC in the jurisdiction or region. In addition, the EOP should guide members on how to incorporate Tier 2 tenets into their respective HCF EOP. For example, the coalition EOP might provide instructions on such issues as how to request and integrate mutual aid assets into an HCF's incident operations, and what designated communication methods to use between HCFs during response.

[3] LEPCs are mandated by the Superfund Amendments and Reauthorization Act (SARA Title III) for communities with risk of hazardous material incidents from local industry.

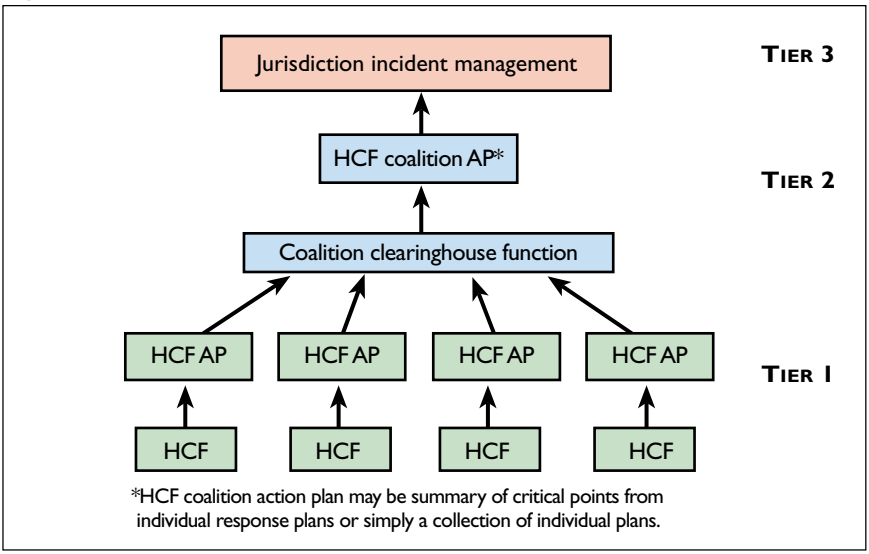
3.3.1 Incident Management Organization

The management organization of Tier 2 is less structured when compared with individual HCFs (Tier 1) and the jurisdiction (Tier 3) because decision authority is based primarily at the management level of each coalition member. For example, an HCF may grant or deny a request for mutual aid based on perceived ability to adequately maintain its own operations. Decisions that affect *all coalition members* are made by consensus through moderated meetings or teleconferences. An example might be the development of strategies for patient evaluation (e.g., risk/prophylaxis stratification of potentially exposed victims after a biological incident). Despite the diffuse decision authority at Tier 2, each HCF should recognize that its response actions and public message should be consistent with those of other HCFs in the coalition.

3.3.2 Proactive Incident Planning

Depending on incident circumstances, the Tier 2 coalition may elect to write a comprehensive action plan (AP) that summarizes each participant's HCF AP (Figure 3-1).[4] This is most likely to occur when the response will be drawn out over an extended period of time (days or weeks). In other cases, the coalition AP may simply aggregate action plans from individual HCFs into a pre-designated format. At the Tier 2 level, this is typically accomplished through a clearinghouse function that receives data from HCFs, collates them, and returns the aggregate data to HCFs.

Figure 3-1. Tier 2 Coalition Action Plan



[4] Additional information on the key components of an action plan is provided in Appendix C.

The Tier 2 coalition AP developed for each operational period requires approval by each coalition member. This type of unifying document, which describes common response goals and strategies, the situation at individual HCFs, the resources available, and other parameters, could facilitate integration with incident management at the jurisdictional level (Tier 3).

3.3.3 Information Sharing

The Tier 2 coalition clearinghouse function ensures that HCFs have the information they need at a level of detail that enables them to provide adequate MSCC in situations where jurisdictional incident management (Tier 3) may not yet be involved. Its primary function is to gather, collate, and disseminate aggregate information; it is *not* intended to analyze or filter information to make independent jurisdiction-level decisions (which is the purview of Tier 3).

The Tier 2 coalition must have adequate systems in place to collect data from HCFs and rapidly return aggregated information to coalition members. Communication procedures should be as simple as possible. For example, it may be beneficial to develop spreadsheets that allow data to be electronically collated and the aggregate data quickly returned to the HCFs. To promote integration with jurisdictional incident management (Tier 3), the clearinghouse function must have a mechanism available to simultaneously provide data/information to Tier 3 for processing and further analysis. This "real time" flow of information enables HCFs to rapidly assist each other during response and to identify common needs and issues for presentation to jurisdiction support assets.

Some important preparedness phase considerations include:

- Select a site to support the Tier 2 information function that has 24-hour operations and the requisite support equipment (e.g., computers, radios, facsimile). Options include a hospital-based communications center for medical transport services, a private EMS service, or other entity.
- Designate personnel to process and manage incident-related information so that the capability is available 24/7. Examples could include personnel from the organizing body of the coalition or representatives designated on a rotating basis from individual HCFs.
- Identify the type of information that might be important to collect and share across the coalition. Examples could include HCF action plans, initial and updated bed counts, patient volumes, and status of personnel, supplies, and equipment.
- Establish preferred methods of communication, such as radio, telephone, Internet, and facsimile.

3.3.4 Medical Mutual Aid

Mutual aid is assistance between HCFs through the provision of facilities, equipment, personnel, or supplies when individual resources cannot meet the surge demands generated by a specific incident. Exhibit 3-2 provides an operational description of medical mutual aid.

Exhibit 3-2. Mutual Aid Memorandum of Understanding: Operational Description

The term *mutual aid* refers to the establishment of a formalized compact between response entities from neighboring jurisdictions. Historically, this agreement allowed for the provision of emergency services, on a reciprocal basis, when individual resources were inadequate to deal with a specific incident. For example, the Emergency Medical Services System Act passed by Congress in 1973 identified mutual aid as one of fifteen essential components in the formation of EMS systems in the United States. This "helping hand" concept has become so incorporated into the fire service, EMS and law enforcement communities that failure to implement and update such agreements can constitute a violation of State regulations.

The HCF mutual aid memorandum of understanding (MOU) is a *voluntary commitment* (not a legal agreement) by each participating HCF to share information and provide available assistance in a major emergency or disaster. The MOU describes a systematized approach to HCF response for disaster events, whether external or internal to an institution(s). It addresses the exchange of medical personnel, supplies, pharmaceuticals, and equipment, and the evacuation or admission of patients to or from any member facility in the event of a disaster. *The mutual aid system is not a replacement for any individual hospital's emergency preparedness plan; rather, it is meant as a supplement that will augment an institution's capabilities*. The MOU assumes that the facility has implemented its own EOP prior to activating the mutual aid system, and that the adequacy of the affected facility's response has been exceeded. Any event requiring activation of the mutual aid system is expected to be of a magnitude that it also involves municipal emergency services and the jurisdiction's department of public health.

The Tier 2 coalition should identify mutual aid possibilities and formally establish mutual aid processes for a jurisdiction or region during preparedness planning.[5] Important provisions in this arrangement include:

[5]In most cases, HCFs will first go through their normal supply chain to address surge demands. If this is not sufficient, mutual aid is a timely and cost-effective way to provide MSCC.

- Donor HCFs should send only credentialed staff in response to a request for assistance; the receiving HCF essentially accepts the credentialing process of the donor facility.
- Donor HCFs should pay staff members who volunteer to assist other facilities; the requesting HCF then reimburses this cost within a specified period of time.
- Liability coverage is carried by the donor facility, but any expenses associated with the liability coverage are guaranteed by the receiving facility.
- Requesting HCFs agree to rehabilitate equipment before it is returned, to replace donated supplies, and to reimburse all associated costs.
- Requesting facilities designate staff to receive, brief, assign, and supervise donated healthcare personnel.
- When patients must be moved between facilities, the HCF requesting assistance is responsible for arranging transport (including transmitting the patient's chart and other information):
  - The transfer of responsibility for a patient occurs once the patient reaches the new facility.
  - The accepting HCF has full authority to assign one of its physicians as the primary medical provider for the patient, but grants temporary courtesy staff privileges to the patient's usual physician.
- Additional issues are addressed in the American Hospital Association's template, Model Hospital Mutual Aid Memorandum of Understanding (located at http://www.hospitalconnect.com/aha/key_issues/disaster_readiness/resources/HospitalReady.html).

Once the mutual aid process is established and documented, coalition members should be educated and trained on how to request and/or receive support. This includes knowing the proper procedures to follow, which personnel should make a request, whom to notify, and how to receive and financially account for donated resources—the latter being important for reimbursement after response. A short briefing should be prepared for staff members who volunteer to deploy to other facilities.

3.4 INTEGRATION WITH OTHER TIERS

An important function of the Tier 2 coalition is to integrate community medical assets with non-medical response organizations in the jurisdiction. This is accomplished through a Tier 2 *liaison function*. Having one liaison to represent the collective interests of HCFs (Tier 2) at the jurisdiction (Tier 3) level enables non-medical response assets to more easily interface with and understand the concerns of the healthcare community.

The Tier 2 coalition may include HCFs from beyond a single jurisdiction. This may be desirable especially in rural areas, where health and medical assets are scattered. In such cases, the Tier 2 coalition should closely coordinate its preparedness planning with each Tier 3 jurisdiction covered by the coalition's resources. During response, the jurisdiction that is primarily responsible for the medical incident response (i.e., for the victims generated within its boundaries) would be the primary support to the Tier 2 coalition, ideally in close coordination with other involved jurisdictions.

Depending on specific incident circumstances, Tier 2 coordination with the following agencies might be considered:

- EMS—tactical and strategic issues may be addressed through formal liaison with EMS. For example, Tier 2 may provide frequent status reports to EMS with each HCF's up-to-date receiving capacity. This promotes a more equitable distribution of patients by accounting for patient walk-ins, of which EMS transport officers might otherwise be unaware. At a strategic level, the Tier 2 liaison could have important input into action planning occurring within EMS.
- Public Health—presenting HCF concerns in a single, organized format to public health promotes a more timely response. This association is mutually beneficial because patient numbers, symptoms, or other patient-related information that is collected and formatted in a standardized manner by Tier 2 can be invaluable to public health epidemiological investigations.
- Law Enforcement—specific police support may be requested, or law enforcement may be alerted when their activities affect HCF operations (e.g., road closures that limit access to HCFs).
- Public Works—this is important in the event that loss of a specific utility affects HCF operations.
- Others—this may include the public school system, fire service/HAZMAT, military, national guard, or others as indicated by incident circumstances.

To promote an organized response system, the Tier 2 liaison is best assigned to the local Emergency Operations Center (EOC), or to the jurisdictional incident management (Tier 3), depending on the incident. In a primarily non-medical event, the Tier 2 liaison will likely integrate at the EOC; in a major medical event, integration should occur within the jurisdiction's IMS (see Figure 4-1). If a jurisdiction operates using principles outlined in the next chapter, representatives from all of the just-listed agencies would be present and available to work with the Tier 2 liaison.

3.5 Illustrative Example

The following example demonstrates how the concepts presented in this chapter may be applied during an actual incident response. The various phases of response (as described in Chapter 1) highlight when critical actions should occur; however, the example extends only as far as incident response, since this is the focus of the MSCC Management System.

Background and Incident Description

- During MSCC preparedness planning, HCFs in Jurisdiction Y developed a sophisticated healthcare coalition (Tier 2) that is sponsored by the largest hospital in the city with support from the jurisdiction's Department of Health (DoH).
- The sponsoring hospital's primary contribution to the Tier 2 coalition is the commitment of its communications center, which during baseline operations coordinates helicopter and ground critical care transports for the hospital. During a major incident, the hospital assigns additional personnel to the communications center to ensure an operational capability for the Tier 2 coalition.
- A large incendiary explosion occurs at a subway station during evening rush hour. Calls to 911 report many burned casualties emerging from the underground station, which is on fire. Many victims flee the area before first responders arrive and organize the scene. The number of victims that may be trapped underground is a major concern.

Incident recognition is provided across the Tier 2 coalition by EMS dispatch. Multiple 911 calls describing "a large explosion with casualties" trigger a pre-determined threshold, and the EMS dispatcher notifies coalition hospitals as EMS units are sent to the scene. Almost simultaneously, initial media reports describe an explosion with casualties. Subsequently, the hospital closest to the blast site notifies the Tier 2 coalition that they have already received several walk-in burn patients from the event.

Notification/activation of the Tier 2 coalition occurs immediately and is accomplished by the initial EMS dispatch communication. The initial notification is sketchy and states only that an explosion has occurred at or near Station X, many casualties are expected, and EMS scene officers will call back shortly for an HCF bed availability count. Because of preparedness planning and training, the Tier 2 coalition partners know to immediately survey their HCF's bed availability and categorize additional patient capacity according to a predetermined format.

Mobilization involves the designation of the Tier 2 leadership for the incident response. Senior administrators from HCFs closest to the blast site provide the leadership for the Tier 2 coalition because operations at their facilities are likely to be most affected by the medical surge needs of victims of the explosion. Management and Operations personnel for the Tier 2 coalition rapidly mobilize, and each HCF in the coalition activates its EOP.

Response begins within minutes, as initial bed counts are reported by each HCF. The Tier 2 information clearinghouse function collects and aggregates the data, and provides a composite of the data to EMS for use by triage and transport officers, and to the DoH communications officer for jurisdictional (Tier 3) planning. Moreover, the composite is immediately distributed to all coalition HCFs and is used by hospital incident managers to anticipate surge needs for direct patient care or potential support needs for their partner HCFs.

- Shortly thereafter, the hospital closest to the blast site reports to the Tier 2 coalition that they are inundated with self-referrals from the scene. The composite hospital-receiving capacity is revised and transmitted to EMS so that triage and transport officers can adjust patient distribution accordingly. The revised composite is also sent to DoH and to all coalition HCFs.

Through the Tier 2 communications mechanism, coalition HCFs (with DoH participating) receive an incident update from an assistant EMS

Chief at the blast site. The total number of victims is unclear because underground areas have not been fully accessed by rescuers. The Tier 2 coalition decides to implement a formal reporting mechanism to facilitate distribution of incident information to the HCFs and to jurisdictional health authorities (Tier 3). The Tier 2 clearinghouse function provides an electronic reporting format for hospitals to use and initially requests submission on an hourly basis. Information from the reports is collated by the Tier 2 clearinghouse function and redistributed back to the HCFs to give them a more comprehensive perspective of the response. Essential elements of information in the reports include:

- Situation updates at HCFs (counts of victims at each facility);
- Resource updates (e.g., available beds, staff, supplies, pharmaceuticals);
- A composite communications plan that describes how jurisdictional authorities (Tier 3) can contact individual HCF's incident management (Tier 1).

The Tier 2 coalition coordinates various services among the HCFs. For example, staffing agencies that supply healthcare personnel to more than one HCF are coordinated through the Tier 2 coalition to prevent serious shortages at any one facility. In addition, the coalition sends a liaison to the jurisdiction's Emergency Operations Center (EOC) to convey the collective issues and concerns of the HCFs to the EOC management team and appropriate Emergency Support Functions (ESFs). For example, the liaison to the EOC informs the jurisdiction that law enforcement activities (e.g., street closures) have hindered the ability of off-duty staff to return to the hospitals to assist with the surge in patient volume. This problem is rapidly addressed.

The blast has caused a significant number of eye, burn, and respiratory injuries, which severely challenge the response capability of several HCFs. The Tier 2 coalition assists in coordinating medical mutual aid to these facilities:

- *Eye injuries:* The Tier 2 coalition rapidly locates available ophthalmologic capacity at partner facilities and coordinates the transfer of some victims with eye injuries (who are otherwise stable) to those facilities.

- *Burn injuries:* The one burn center in the area is overwhelmed with victims that have significant burns. The Tier 2 coalition writes guidelines for early inpatient hospital treatment of burn patients, and these are distributed electronically to area hospitals. Burn and trauma experts from an adjoining, unaffected jurisdiction are made available through the hospital radio/conference call system to provide clinical guidance as requested by the non-trauma and non-burn facilities that are receiving casualties. This information sharing increases the capability of hospitals to provide adequate initial burn care until extra-regional referrals can be arranged.
- *Respiratory injuries:* One hospital has received a large number of victims that are progressing to respiratory failure due to smoke inhalation. The hospital reports an urgent need for additional critical-care airway management capacity (i.e., ventilators, respiratory therapists, and critical-care staff). Two HCFs farther away from the blast site volunteer their excess capacity, which was generated when the HCFs activated their respective EOPs. Credentialed staff, ventilators, and other supplies are dispatched to the requesting hospital. The jurisdiction's health authority (Tier 3) is also notified that additional ventilators, supplies, and critical care staff are needed from outside the jurisdiction. Actions are initiated to obtain these resources.

As the blast scene is cleared of victims, the jurisdiction's defined "incident" transitions from focusing on fire/EMS rescue at the site to supporting HCFs as they surge to meet victims' medical needs. Medical representatives from the Tier 2 coalition are appointed as senior advisors to the Tier 3 incident management team. Input from these advisors to jurisdictional incident management will promote optimal support of the local HCFs in their efforts to address evolving surge demands.

3.6 REFERENCES

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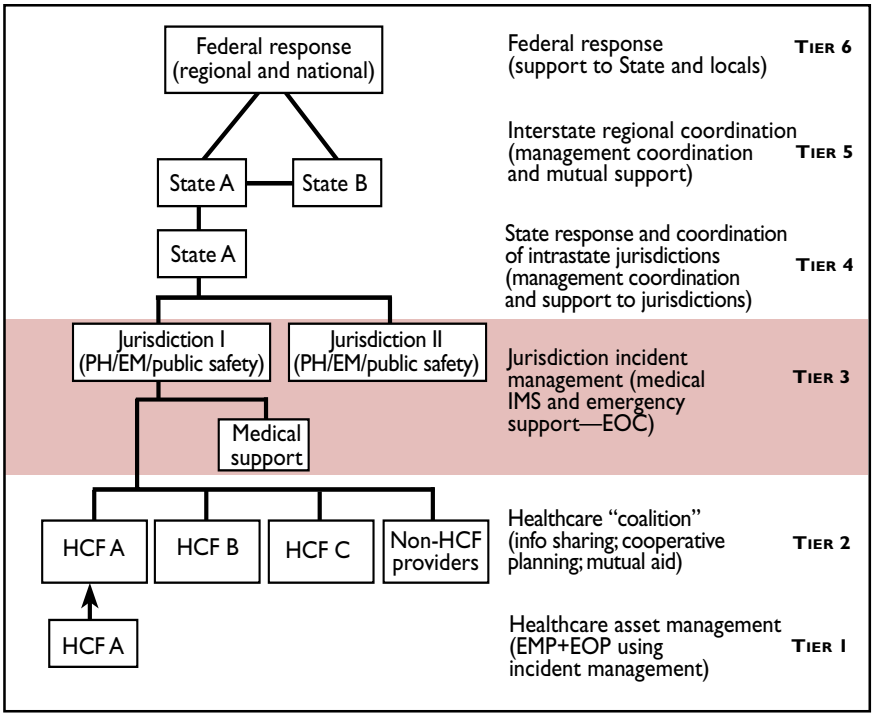
[3] Gursky, E., Inglesby, T. V., and O'Toole, T. "Anthrax 2001: Observations on the Medical and Public Health Response." *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science,* Volume 1, Number 2, 2003; 97-110.

NOTES

Chapter 4:
Jurisdiction Incident Management (Tier 3)

Contents

Jurisdiction Incident Management (Tier 3)



Jurisdiction incident management (Tier 3) is the primary site of integration of healthcare facilities (HCFs) with fire/EMS, law enforcement, emergency management, public health, public works, and other traditional response agencies. It provides the structure and support necessary for medical assets to maximize MSCC, and it allows direct input by medical representatives into jurisdictional action planning and decision-making. In addition, it links local medical assets with State and Federal support.

Key Points of the Chapter

Jurisdictional incident management (Tier 3) addresses MSCC at the level of the responding community. Earlier chapters focused on the management of individual healthcare assets (Tier 1) and on promoting cooperation among point-of-service medical providers (Tier 2). Tier 3 builds on this by describing the integration of health and medical assets into the functional organization of incident management in the traditional emergency response community.

When a mass casualty or complex event occurs, multiple disciplines may be called into action, including public safety, public health, human services, emergency management, and others. These disciplines do not routinely work together in this capacity and so are often unfamiliar with each other's emergency preparedness and response procedures. It is crucial, therefore, to establish incident management processes for jurisdictional (Tier 3) response that integrate the many diverse disciplines and promote coordinated response actions. This is accomplished through a well-organized and tested jurisdiction Emergency Operations Plan (EOP).

The basis for effective jurisdictional incident management (Tier 3) is the jurisdiction's Emergency Management Program (EMP). Public health and acute-care medical assets should be viewed as key components of the jurisdiction's EMP and should have direct input into preparedness and response planning. In times of crisis, jurisdictional management (Tier 3) will benefit from receiving a health and medical perspective on issues that determine incident objectives and response strategies. Moreover, individual HCFs may maximize their ability to provide MSCC through enhanced coordination with EMS and other community resources.

The integration of diverse organizations during incident response is best accomplished through *unified incident management*, a concept that allows multiple agencies to maintain significant management responsibility and to work together to achieve optimal response. A unified management approach promotes consistency throughout the response system. The participation of health and medical disciplines in unified jurisdictional incident management (Tier 3) is important since they bear a primary responsibility for the welfare of responders and the general public.

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4.1 The Role of the Jurisdiction in MSCC

Jurisdictional incident management (Tier 3) and its emergency management operations support are critically important to maximizing MSCC. In a mass casualty or complex event, Tier 3 is the management level that effectively coordinates activities among the multiple and disparate entities involved in response for that jurisdiction. Because of its obligation to the community, Tier 3 is responsible for defining incident objectives and an overall response strategy for the community. Data from various response disciplines are aggregated and analyzed at Tier 3. Thus, the jurisdictional information processing function is critical in promoting timely application of community resources to support urgent medical care at individual HCFs (Tier 1).

4.2 Jurisdiction Emergency Management Program

The jurisdictional EMP brings together the many agencies that have defined roles in emergency or disaster response, including public health and acute-care medical organizations (Exhibit 4-1). It involves their active participation as a group in activities to mitigate, prepare for, respond to, and recover from mass casualty or complex events. It does not (and should not) preclude agencies from conducting their own EMP; rather, it provides a platform for individual efforts to be coordinated.

Exhibit 4-1. Participant Agencies in the Jurisdiction Response

- Emergency management
- Emergency Medical Services (EMS)
- Fire service (often combined with EMS)
- Local law enforcement (police, sheriff, and others)
- Public health and human services (often combined)
- Public works
- Acute medical services (HCFs and other acute-care providers)
- Others, as determined by incident circumstances (e.g., school system, local Federal resources, such as Federal law enforcement, military assets, or Veterans Affairs facilities)

The jurisdictional EMP is best developed (and refined) through regular meetings of the leadership of each participant agency. These meetings should be conducted using formats similar to those developed for incident planning (i.e., there should be a designated leader/moderator, an agenda specifying the meeting objectives, defined processes for decision-making,

and documentation of pertinent information and action items). The meetings allow participants to interact with one another and work toward common goals, just as they would be called on to do in an actual incident response.

An effective Tier 3 preparedness planning process accomplishes the following:

- Provides an opportunity for a jurisdiction's emergency response "players" to get to know one another and to understand each other's operations and perspectives;
- Enables response disciplines to better understand the emergency procedures and methods that characterize each other's response domain;
- Promotes a sense of trust between response disciplines; and
- Provides a forum for discussing issues or concerns and implementing effective methods to resolve differences fairly.

Similar to Tiers 1 and 2, a valid hazard and vulnerability analysis (HVA) forms the cornerstone of the jurisdictional EMP. Findings of each response agency's HVA may be summarized to develop the jurisdiction's HVA, or a separate joint analysis may be performed. An integrated HVA provides an opportunity for agencies to assist one another in addressing collective and individual risk. It also gives advance warning of areas where certain agencies are particularly vulnerable. The jurisdiction's emergency management authority usually develops the jurisdiction's HVA, which should be reviewed and updated annually to address new or emerging threats to a population (e.g., construction of a chemical manufacturing plant).

Important insight is gained by incorporating public health and acute-care medical disciplines in the jurisdiction's HVA, either through the Tier 2 HVA or by including them in the joint analysis. In many jurisdictions, public health authorities have already undertaken HVA activities in accordance with recent State and Federally funded mandates related to bioterrorism. These efforts may help with examinations of risks that may complicate jurisdictional (Tier 3) response to a bioterrorism event. There will be common hazards identified and, potentially, common vulnerabilities. Most significantly, the medical sector may have vulnerabilities not recognized and addressed in the jurisdiction's regular planning process. This is important since jurisdictional planning usually assumes that HCFs will survive the hazard impact and be available to care for incident victims.

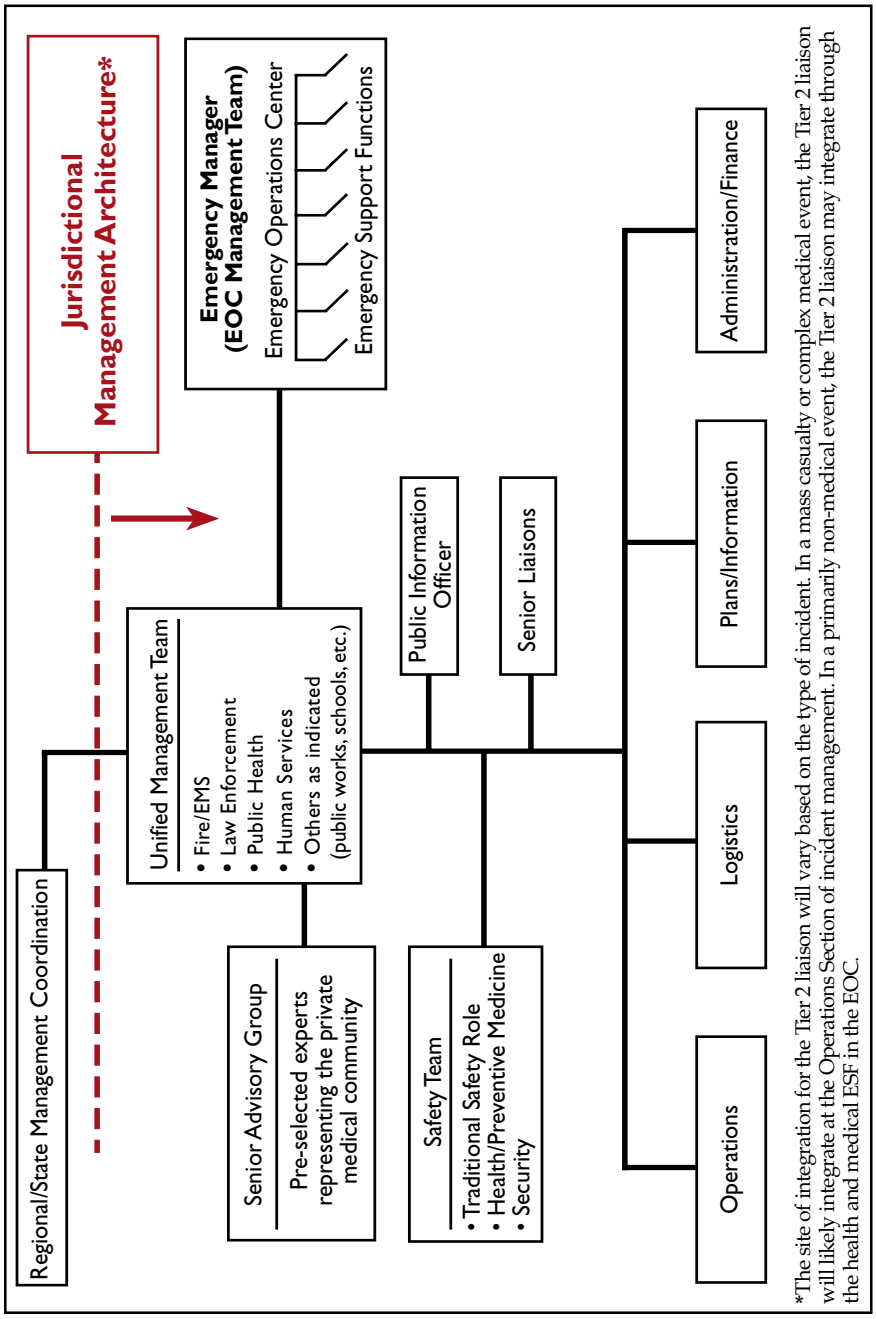
4.3 Jurisdiction Emergency Operations Plan

The jurisdictional EOP provides action guidance for incident response at the level of the responding community. It may also be referred to as the emergency response plan, or simply the response plan. The sum of all activities related to developing and implementing the jurisdictional EOP represents *preparedness*. This includes establishing equipment and supply needs, training personnel, and exercising the system to evaluate and improve procedures. Important considerations for the jurisdictional EOP include:

- Developing all-hazards processes that can address potential incidents ranging from traditional weather events to large explosions, infectious disease outbreaks, or contamination scenarios;
- Identifying essential participants in the jurisdictional EOP when it is implemented for a response;
- Providing a systems description of how the various disciplines will be organized and integrated during response (may vary depending on the type of event), to include:
  - Management structure and procedures for a multi-agency response; and
  - Processes for information management and exchange among participants.
- Describing key responsibilities for each stage of response.

By incorporating basic IMS and emergency management principles, and by integrating public health and acute-care medical disciplines, a functional Tier 3 management structure is proposed (Figure 4-1).

Figure 4-1. Generic Management Structure for Jurisdictional Response



*The site of integration for the Tier 2 liaison will vary based on the type of incident. In a mass casualty or complex medical event, the Tier 2 liaison will likely integrate at the Operations Section of incident management. In a primarily non-medical event, the Tier 2 liaison may integrate through the health and medical ESF in the EOC.

4.4 Organization of the Tier 3 Response

The jurisdictional (Tier 3) response to a major medical incident is guided by the same general IMS principles as the Tier 1 response (i.e., it is organized by functional areas—Management, Operations, Logistics, etc.). However, responsibility for the five primary functions may be distributed among multiple agencies at the Tier 3 level. In many cases, collaborative efforts between disciplines are necessary to ensure that these functions are adequately addressed (Exhibit 4-2). This is particularly true for the incident management function. A distinguishing feature of the jurisdictional (Tier 3) response, and thus a focus of the remainder of this chapter, is *unified incident management.*

Exhibit 4-2. Example of Multi-Agency Collaboration During Response

After recognition that a biological agent has been intentionally released into the community, public health may be designated as the lead agency in incident management, with primary responsibility for protecting the health and safety of the community. Public safety agencies also play a critical role by providing assistance to public health through their familiarity and expertise in IMS. They also support public health and medical operations. For example, the Logistics section may consist primarily of fire service and public works resources providing support to public health by assisting epidemiological investigations or delivering prophylaxis medications to distribution centers.

4.4.1 Unified Incident Management

Because multiple disciplines may have significant management roles in incident response, implementing a unified incident management team (UIMT) is an effective way to promote cohesion within the response system. The UIMT facilitates information sharing and allows each involved discipline to provide input directly into the development of incident objectives and priorities. Although each agency's resources are integrated into the jurisdictional (Tier 3) operation, each agency retains *individual authority* over its assets and responsibilities. The disciplines most important to incorporate into the UIMT are those that primarily manage response in the jurisdictional EOP, including fire/EMS, law enforcement, public health, public works, and human services.

4.4.1.1 How Unified Management Works

Although the UIMT approach provides a certain level of equality among management participants, a lead agency must be designated as the final arbiter in decision-making. This lead agency *authority* (a "first among equals") is determined by the type of incident according to guidelines established during preparedness planning (Exhibit 4-3). The lead agency should be clearly established at the outset of the incident response and publicized throughout the system so there is no doubt where the final decision authority rests.

Exhibit 4-3. Example of Lead Agency Designation Guidelines

Crisis/pre-hazard impact	Police department
Hostage/standoffs	Police department
Fires/explosions	Fire service
Flash floods	Fire service
HAZMAT release	Fire service
Infectious disease	Public health
Food contamination with illness	Public health
Water contamination, utility disruption	Public works

Because strategic concerns may change as an incident evolves, the lead management authority may be temporarily deferred, via open dialogue between UIMT participants, to another agency. In some cases, incident parameters may change enough to require a *transfer* of lead authority to another discipline. In a well-run UIMT, the decision to transfer lead authority is made during a management meeting using processes established for incident planning; it is documented and disseminated to all responders. Processes for deferring or transferring lead authority should be outlined during preparedness planning.

The site where the UIMT operates must be rapidly established and communicated to all agencies at the outset of a response. In any large-scale or multi-scene event, several incident management sites may be established reactively, with multiple disciplines involved. Identifying where the *primary* incident management is occurring—and how it integrates the other operations, support, and information centers—should be prioritized as a critical incident-planning task.

Responsibility for specific functions under unified incident management should also be defined using guidelines established during preparedness planning. The conduct of Safety, Liaison, and Public Information functions may be considered as follows:

- ***Safety Team*** oversees all actions taken to protect responders, including issues related to the health (e.g., vaccination/prophylaxis) and security safety of responders. It is best managed by a multidisciplinary group composed of the jurisdiction's (Tier 3) public health, EMS, law enforcement, and/or medical assets. The Safety team provides high-level input directly to incident management and has the authority to interrupt activities that appear unduly hazardous to responders.
- ***Senior Liaisons*** are assigned to agencies outside the jurisdictional IMS, such as jurisdictions adjacent to an affected community, or Federal agencies operating independently in an area. Unified management designates liaisons based on the type of incident and the agencies involved. For example, during response to a terrorist act involving an infectious disease outbreak, a senior public health official might be assigned as a liaison to the Joint Field Office (JFO) established by the FBI. Assignments may vary from one incident to the next, and as incident parameters change, but liaison staff should remain consistent to promote continuity of interactions.
- ***Public Information Officer (PIO)*** serves as the official spokesperson for the jurisdiction (Tier 3) response, talking specifically about the incident and providing official incident-related data. Moreover, the PIO monitors the media message and the public's reaction in an effort to detect rumors and correct misinformation. The PIO should not usurp the responsibility of the PIO from the jurisdiction's political authority or from the Emergency Operations Center (EOC). Thus, processes should be established during preparedness planning to ensure coordination among these entities in developing the media message. As with safety, a multidisciplinary approach to this task is generally preferred, with the lead PIO assigned according to the lead UIMT agency.

4.4.1.2 Medical Participation in Unified Management

During a large-scale event, especially one with a primarily medical focus, acute-care medicine should be involved in incident management decisions and defining the response objectives. Unified management, therefore, must allow for direct input from a jurisdiction's (Tier 3) acute-care medical community.[1] This can be accomplished either by including medicine as a formal participant in the UIMT (with fire/EMS, human services, law

[1] Hospitals, medical clinics, other HCFs, and private practitioners' offices constituting Tier 1 in the MSCC Management System represent the acute-care medical community.

enforcement, etc.), or by establishing a senior advisory role for medicine to the UIMT. Because most medical assets are privately owned (and therefore lack legal protection for public action during incident response), the senior advisory approach may be preferred.

Figure 4-1 (presented earlier) illustrates the senior advisory concept and how it fits into the UIMT. The medical representatives who serve as advisors may come from the healthcare coalition (Tier 2) or be jointly selected by the jurisdiction's medical community. The role of these "trusted agents" must be clearly defined during preparedness planning. They should be chosen based, in part, on their ability to represent the collective interests and concerns of *all health and medical organizations in the jurisdiction* when presenting recommendations to incident management. In addition, the medical advisors should have operational medicine experience and be well versed in the principles of IMS.

The advisory group should be notified and available on request to provide advice throughout an incident; however, its input is most critical when incident circumstances require the medical community to significantly alter its normal operations (e.g., asking HCFs to adhere to unusual isolation procedures in a prolonged disease outbreak). Although medical advisors report incident information back to their constituents, they are not responsible for providing jurisdictional (Tier 3) management with updates on the status of HCFs. This should occur through a defined process within the Plans/Information function of the jurisdictional IMS.

4.4.2 IMS Functional Area Activities in a Tier 3 Response

Operations, Logistics, Plans/Information, and Administration/Finance sections will likely also require *multiple disciplines* to collaborate using a unified methodology. The managers of these sections, typically known as "Chiefs," make up the general staff of the jurisdictional (Tier 3) response. The lead UIMT manager appoints section Chiefs at the outset of response from a pool of candidates identified and trained during preparedness planning. The Chiefs are usually senior members of the traditional response disciplines who have significant experience in emergency or disaster response and demonstrated expertise in IMS.

Specific activities of the four sections are as follows:

- ***Operations*** develops the tactics to accomplish incident objectives within the strategies set by management. In a jurisdictional (Tier 3) response, several "branches" within Operations may be necessary to organize assets responsible for health and medical issues. These branches, as may be required during a major medical event, are highlighted in Figure 4-2 along with brief descriptions of the activities for which each branch is responsible.[2] The activation of Operations branches will depend on incident circumstances and, in fact, most incidents will not require all branches.

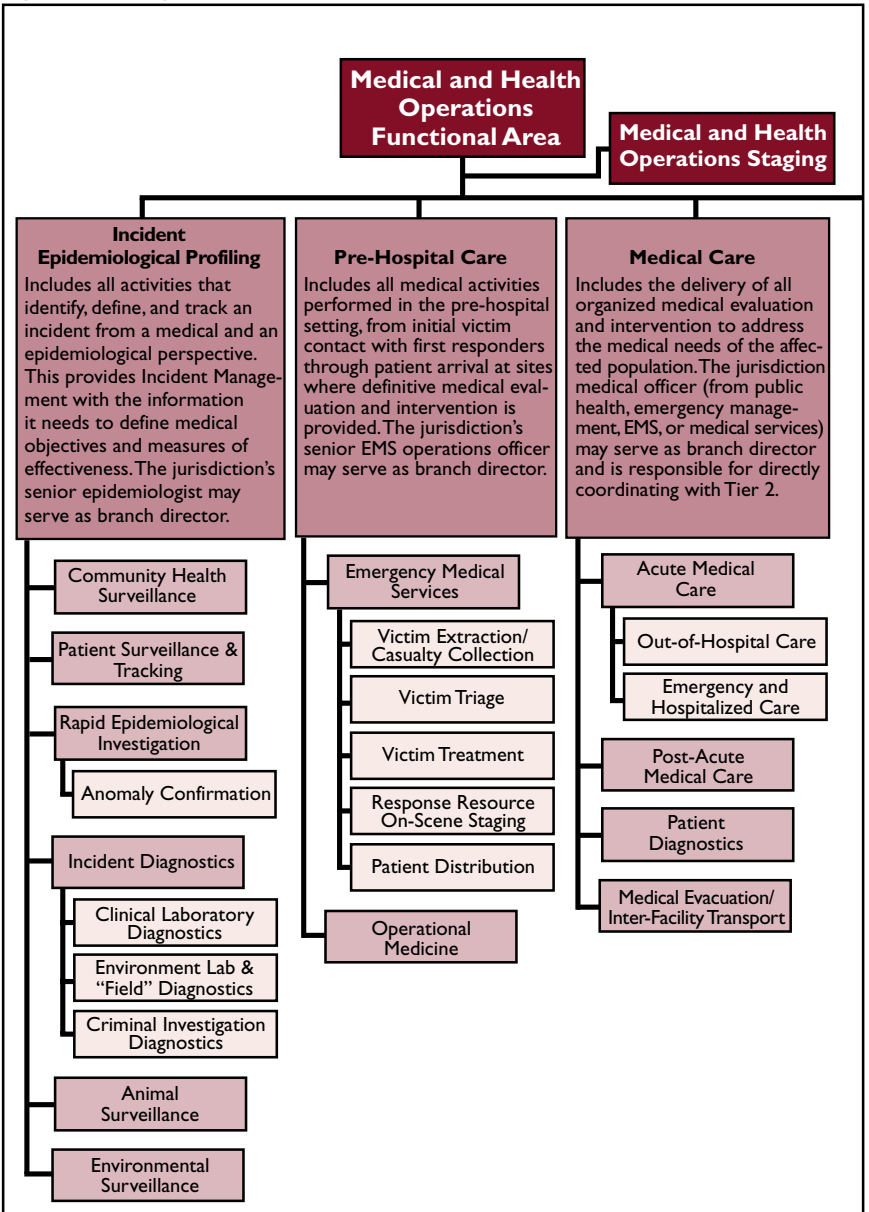
- ***Logistics*** manages activities that provide support through equipment and supplies, transportation, personnel, processing of volunteers, and technical activities to maintain the function of operational facilities. For example, Logistics would help in receiving, transporting, and protecting a cache from the Strategic National Stockpile (whereas Operations focuses on providing prophylactic medications to the at-risk population).

- ***Plans/Information*** supports Management and Operations in processing incident information and developing incident action plans (IAPs) for the response. It is responsible for collecting, analyzing, and disseminating aggregate data, and maintaining up-to-date documentation of resource status. The Plans branch must specifically address:
  - Support for incident management in carrying out planning meetings (e.g., set meeting schedule, develop an agenda, ensure that objectives are established, incorporate decisions into the IAP)
  - Event projections (based on the known characteristics of the hazard and its historical impact, if there is one);
  - Evaluation of response progress by monitoring valid measures of effectiveness;[3]
  - Contingency and long-range planning;
  - Demobilization planning; and
  - Support to complete each IAP (e.g., writing, printing).

[2] More detailed information on each Operations branch can be accessed at http://www.gwu.edu/~icdrm/

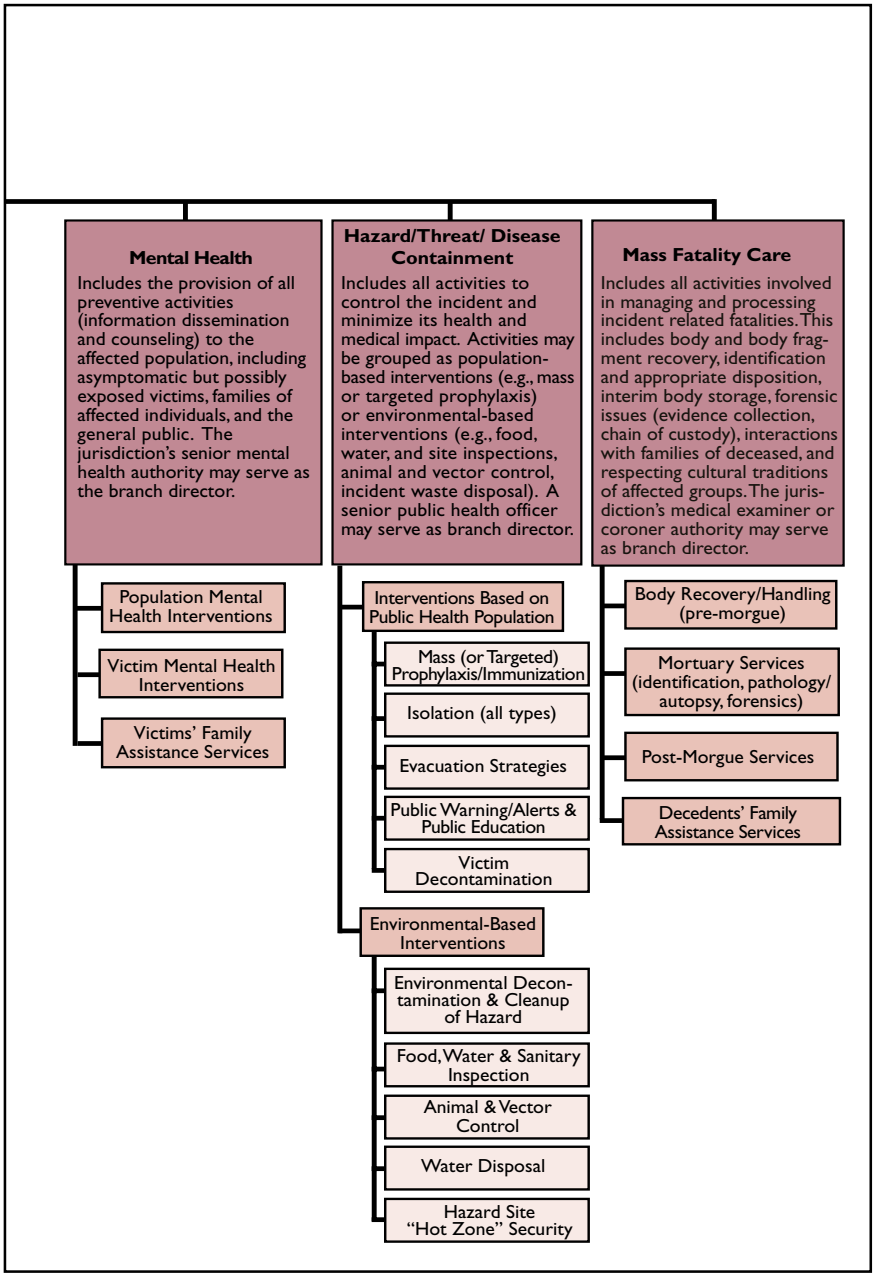
[3] Measures of effectiveness are indicators that management accepts as accurate and valid reflections that incident response is accomplishing its objectives. They should be defined in the planning process.

Figure 4-2. Operations Branches for Medical and Health Assets



Adapted from J.A. Barbera and A.G. Macintyre. *Medical and Health Incident Management (MaHIM) System: A Comprehensive Functional System Description for Mass Casualty Medical and Health Incident Management.* Institute for Crisis, Disaster, and Risk Management, the George Washington University. Washington, DC, October 2002. Access at http://www.gwu.edu/~icdrm/ for more information on individual Operations branches.

Figure 4-2. Operations Branches for Medical and Health Assets (cont.)



The Information branch in a major health or medical response manages multiple types of information, including:

- Incident parameters (e.g., numbers of victims, locations, types of injury or illness);
- Response parameters (e.g., tracking such resources as staffed beds available at local hospitals, quantities of a particular prophylaxis for distribution); and
- Recommendations and directives (e.g., informing responders and the general public about evaluation and treatment protocols).

- ***Administration/Finance*** supports Management and Operations in administrative issues and in tracking and processing incident-related expenses. Examples of the issues that might be of concern for the health and medical disciplines include:
  - Practitioner licensure requirements;
  - Regulatory compliance issues, including the possible temporary suspension of certain regulations during the period of emergency (as indicated);
  - Financial accounting during an incident; and
  - Contracting for services and supplies directly available to incident managers.

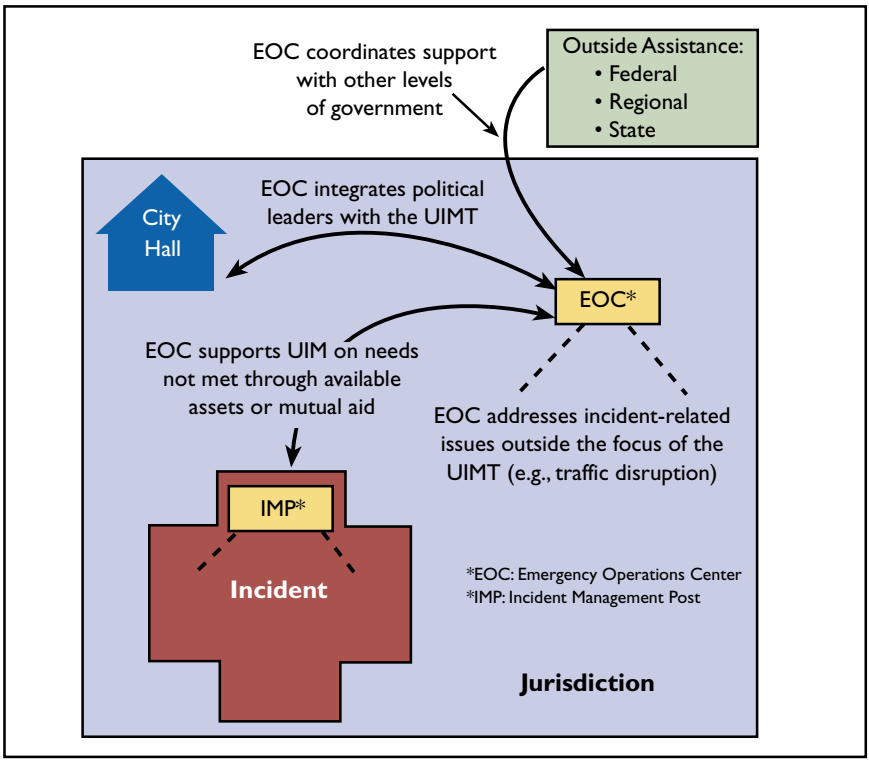
4.5 Integration of Jurisdiction Incident Management and Local Emergency Management

Emergency management operations support to the UIMT occurs through the jurisdiction's EOC. The EOC is the pre-designated site in a jurisdiction from which emergency management personnel and government officials exercise direction and control in an emergency and provide high-level support to the UIMT. In the traditional disaster scenario, the UIMT operates from a management post at the incident scene (e.g., site of a building collapse), and is geographically separated from the EOC (Figure 4-3).

If the incident is diffuse, involves the entire jurisdiction, or in some other way prevents the UIMT from establishing its management post elsewhere, the EOC may provide the structure and function for the UIMT. When this occurs, the UIMT should occupy separate space from emergency management personnel so the focus of the UIMT remains distinct from that of the local emergency management. However, it is expected that the EOC leadership (in many cases, this is the local emergency manager) will attend

and participate in UIMT planning meetings and operations briefings, and related activities.[4] This integrates the UIMT with local emergency management without risking crossover of their designated response roles. It also empowers the EOC to more actively support the UIMT and to anticipate possible incident response needs.

Figure 4-3. EOC Incident Support in Traditional Emergency Response



4.6 Integration with Other Tiers

The jurisdictional (Tier 3) response system integrates with other tiers primarily through its information management function. The capability to collect, analyze, and disseminate aggregated data should always be operational, even if only at a baseline level during times of non-response. This enables healthcare coalition (Tier 2) leaders to be notified of upcoming

[4] When the UIMT is operating at a distant incident scene, EOC leadership should still participate in UIMT planning meetings via teleconference or some other defined mechanism. This is helpful in promoting full coordination between incident management and emergency management operations support.

meetings or changes to the jurisdictional response system. It also facilitates timely incident response by providing key medical personnel (e.g., Tier 2 coalition managers) with the earliest reports of hazards that may have significant medical implications.

During incident response, a robust jurisdictional (Tier 3) information management function continually manages data from the Tier 2 coalition to obtain real-time feedback on HCF operations. Integration of this information into jurisdictional (Tier 3) action planning promotes coordination of response actions between tiers. For example, plans to shut down roads or public transportation systems in an area may greatly affect the ability of healthcare personnel to reach local HCFs. This information (perhaps communicated via the Tier 2 liaison to the UIMT) is beneficial in helping Operations personnel develop tactics that will not interfere with HCF activities. In a similar way, an adequate information management function can provide much needed guidance to medical practitioners during an incident (Exhibit 4-4).

Exhibit 4-4. Jurisdictional Guidance to Local Medical Practitioners

Example: In an unusual infectious disease outbreak, a jurisdiction's public health authority may issue health advisories that contain practitioner guidelines on patient evaluation, treatment modalities, and methods for reporting suspect cases. Medical practitioners benefit from the ability to access this information as incident circumstances evolve because it is both medically sound and it carries jurisdictional public health authority for implementation. The application of this guidance across a jurisdiction promotes hazard impact containment through evaluation and treatment efficiency and consistency, data reporting for incident profiling, and indications for altering/improving medical therapy or other recommendations.

The New York City Department of Health and Mental Hygiene website is an excellent public health model for disseminating accurate, timely, and authoritative medical guidance (http://www.nyc.gov/html/doh/home.html).

The jurisdictional (Tier 3) IMS integrates with State authorities (Tier 4) primarily through its information management function. Timely processing and dissemination of incident and response parameters enable the Governor to determine the need for declaring a formal emergency or requesting Federal support. Such information also makes it possible to link affected intrastate jurisdictions so they can coordinate response efforts. Finally, it facilitates the coordination and distribution of State tactical mutual aid to areas with the greatest need.

4.7 Illustrative Example

The following example demonstrates how the concepts presented in this chapter may be applied during an actual incident response. The various phases of response (as described in Chapter 1) highlight when critical actions should occur; however, the example extends only as far as incident response, as this is the focus of the MSCC Management System.

Background and Incident Description

- Jurisdiction Alpha is a city of moderate size whose western border adjoins another State.
- A very sick patient with severe respiratory distress and a fever is admitted to a hospital in Jurisdiction Alpha. His admission was preceded by nearly three days of progressive illness with cough. During this time, he continued to work as a butcher in a small but popular meat shop. Since the patient had recently returned from an overseas trip to areas where severe acute respiratory syndrome (SARS) had reappeared, SARS is suspected and the jurisdiction's Department of Health (DoH) is notified.
- The patient dies a short time after his admission to the hospital.

Incident recognition begins when the clinical suspicion is first reported to DoH and public health experts recognize the implications. Although it has not been confirmed, the suspicion of SARS is enough to warrant immediate actions by DoH, and a rapid health investigation commences. Epidemiological questioning quickly indicates that the patient (index case) had exposure to many customers at the meat shop after becoming demonstrably ill.

Notification/activation occurs when the DoH public health officer requests a management meeting with representatives from emergency management, fire/EMS, law enforcement, and public works. After a brief discussion, they agree to partially activate Jurisdiction Alpha's EOP for public health response (formal declaration of emergency is *not* required to activate portions of the EOP). The following actions also occur:

- Using the jurisdiction's public safety communications center (as specified in the EOP), a written communication is sent to all agencies that automatically participate in the EOP. The notification only activates jurisdictional resources that are needed for the initial response.
- An alert is issued to all HCFs in the jurisdiction (through Tier 2) indicating what is known about the demographics and recent history of the index patient, and any reported outbreaks elsewhere in the United States. The alert notifies Tier 2 assets that the jurisdiction EOP is partially activated.
- A similar notification is provided to the State DoH, which notifies neighboring regions and the CDC using mechanisms established in Tiers 4, 5, and 6.
- The mayor and city council are notified and immediately express concern. They recognize the potential human impact, as well as the implications for business and tourism. The mayor's public information officer (PIO) works with the DoH PIO to draft and immediately release a statement to the public explaining the jurisdiction's response.

Mobilization of jurisdictional resources occurs as the designated agencies activate their individual EOPs, and ramp up their staffing accordingly. Similarly, Jurisdiction Alpha's EOC is activated and staffed.

Response is led by a UIMT that was designated in the initial management meeting. The UIMT is composed of selected individuals from jurisdictional (Tier 3) public health, fire/EMS, and law enforcement. The jurisdiction's public health authority is recognized as the "lead" UIMT agency. The UIMT coordinates closely with the jurisdiction's emergency manager, who manages the EOC.

Management representatives from each agency in the UIMT conduct a teleconference to discuss what is known about the incident and to determine a course of action. It is decided that an Incident Management Post (IMP) will be established at the DoH Operations Center, but UIMT members agree to transfer the IMP to the jurisdiction's EOC if management needs exceed the resources available at the DoH Operations Center. This backup is planned because multiple reports are coming in about patients with febrile illnesses reporting to HCFs. Many of these patients have recently visited the butcher shop in question.

Members of the UIMT quickly establish themselves at the IMP and coordinate the integration of their respective disciplines. Each agency maintains authority over its own assets, yet all contribute to the composition of the IMS Sections (Operations, Logistics, etc.). For example, a senior DoH staff member directs the Operations Section, while personnel from other agencies manage specific branches (see Figure 4-2) under Operations.

- A jurisdictional epidemiologist manages the Incident Epidemiological Profiling and Hazard Containment branches, with additional resources supplied by other agencies.
- EMS manages Pre-Hospital Care.
- The Tier 2 coalition manages Hospital Care.
- A jurisdictional medical examiner manages Fatality Care.

Several "trusted agents" from the acute-care medical community are designated to participate in UIMT meetings as senior advisors. Their role is to provide the hospital and medical practitioners' "perspective" when the UIMT is considering jurisdictional decisions.

Expedited SARS serology tests from the index patient strongly indicate the patient died from SARS. Confirmatory testing is being conducted at the CDC. The rapid epidemiological investigation, aided by public service announcements asking anyone in contact with the meat shop to report to a DoH clinic for evaluation, has identified an extensive list of potential contacts. The contacts are given written instructions on the disease, its signs and symptoms, and precautionary measures. They are provided digital thermometers and arrangements are made to contact them daily for a health check.

Based on available information, the UIMT develops the first jurisdictional incident action plan (IAP). The jurisdictional IAP includes:

- Objectives of the response
- Strategies for the response, including:
  - Disease containment for healthcare workers, identified contacts of the index case, and the general public;
  - Surveillance of the health of identified index case contacts;
  - Surveillance of HCFs and medical providers to identify other cases of possible SARS in the jurisdiction; and
  - Contingency planning for medical surge needs (e.g., hospital isolation, critical care services, screening of concerned members of the public).

- Response tactics, including:
  - Educational information for identified case contacts;
  - Voluntary separation of contacts, with health personnel to assist and ensure that they maintain their separation from the public;
  - Educational information and personal protection supplies for family members who remain at home during the contact's period of voluntary isolation;
  - Educational information for healthcare providers describing the early signs, symptoms, and physical findings of SARS. Contact information is also provided to report suspected cases, including how to obtain expedited serologic testing; and
  - Educational information for the public.
- Situation and resource updates for the jurisdiction
- Chart illustrating the jurisdiction's incident management organization, with the primary role of each agency and other significant participants specified; contact information is provided
- Communications and safety plans, including DoH recommended protection (e.g., PPE, isolation, other protective measures for persons caring for potential SARS victims).

The jurisdictional IAP is shared with Tier 2 coalition members and State emergency management officials (Tier 4). The State, in turn, provides pertinent information to adjoining jurisdictions, bordering States, and to Federal health personnel assisting in the State response. The operational period established by the State is adjusted so that State meetings occur one hour after the jurisdiction's (Tier 3) meetings. This phase-shift of Tier 4's operational period allows for coordination of operational briefings.

With the UIMT having defined its incident objectives and strategies through the jurisdictional IAP, other activities are identified for emergency management operations support to address through the EOC. These EOC responsibilities include:

- Interfacing with the private sector (excluding hospitals, which are considered part of incident operations);
- Interfacing with the State and the Federal Government (except for Federal health and medical resources that consult to, or work under, the jurisdiction's management system); and
- Handling school closures, transportation disruptions, and other impacts of the SARS response.

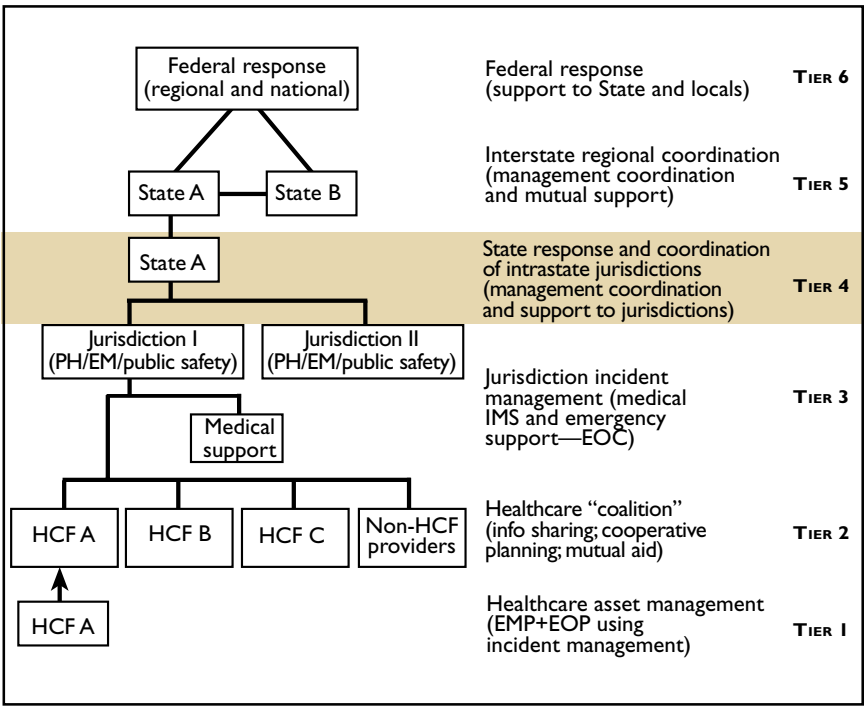
NOTES

NOTES

Chapter 5: Management of State Response and Coordination of Intrastate Jurisdictions (Tier 4)

Contents

Management of State Response and Coordination of Intrastate Jurisdictions (Tier 4)



Tier 4 encompasses all State agencies that are responsible for emergency management, public health, and public safety preparedness and response. It addresses situations in which the State is considered the lead incident management authority, and those in which the State coordinates multijurisdictional incident management (Tier 3).

Key Points of the Chapter

The role of State Government in providing MSCC will vary based on incident circumstances and State-specific regulations. In general, however, States may enhance MSCC by:

- Assisting jurisdictional incident management (Tier 3) when local resources are severely challenged;
- Providing primary incident management in widespread emergencies;
- Providing State resources to assist the local response;
- Coordinating with incident management in other affected States; and/or
- Integrating State and jurisdictional response efforts with Federal support (Tier 6).

The State Emergency Management Program (EMP) should fully integrate public health and acute-care medicine with traditional response disciplines (e.g., fire/EMS, law enforcement). This will benefit State emergency health initiatives, such as bioterrorism preparedness, by promoting interdisciplinary cooperation. It will also benefit non-health-related emergency response by providing an integrated health and medical perspective. An important focus of the State EMP should be developing management processes that facilitate integration between *State-based* and *local or jurisdictional* authorities. Experience has shown that this can be a potential pitfall in effective emergency or disaster response.

State-level incident management can strengthen multijurisdictional response by coordinating management teams in affected jurisdictions. This is best accomplished through a robust Tier 4 information management function. In addition, the coordination of tactical mutual aid between intrastate jurisdictions brings health and medical resources to areas of greatest need. Strategic or "master" mutual aid guidelines developed by the State during preparedness planning facilitate this aid distribution. In incidents where the State has primary incident management authority, State public health and medical managers should organize as part of the State unified incident management team (UIMT), rather than attempt to manage incident response through Emergency Support Function (ESF) positions in the State Emergency Operations Center (EOC).

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5.1 The Role of the State in MSCC

At the State level, authority and responsibility for emergency management typically reside within a distinct Emergency Management Agency (EMA), although variations exist. Before September 11 and the anthrax attacks in 2001, it was common for States to consider public health and medical emergencies to be distinct from other emergencies, thus requiring separate processes for response that were not all centrally supported by the EMA and public safety agencies. This approach has recently begun to change, however, as current State and Federal initiatives (including HHS bioterrorism preparedness programs) call for greater integration among State agencies, and between the State and intrastate jurisdictions.

The role of States in MSCC will vary based on their individual laws and regulations. In general, however, State authorities may assume several key responsibilities during emergency preparedness and response. The following paragraphs describe four such responsibilities.

1. ***Assist jurisdictional incident management (Tier 3)*** when local response resources become severely challenged. This operations support may include:

- Providing assets or funding for the purchase or use of additional resources;
- Assisting with the provision of intrastate mutual aid; and
- Facilitating interaction between affected intrastate jurisdictions.

States can also assist the medical sector by providing regulatory relief during incident response (Exhibit 5-1). Relevant laws or regulations that may need to be revised or temporarily suspended in a public health or medical emergency should be identified during preparedness planning, and processes for their revision or temporary suspension should be formally described. Some examples include:

- Professional licensure, permit, or fee requirements for:
  - State medical, nursing, or other healthcare providers;
  - Out-of-State medical, nursing, or other healthcare providers;
  - Pharmacists or pharmacy services; and
  - Medical examiners.
- Statutes governing the number of licensed or staffed beds allowed in healthcare facilities (HCFs); and

- Statutes governing access to and disclosure of protected medical information.

Exhibit 5-1. Emergency Medical Regulatory Relief

During the Top Officials 2 (TOPOFF 2) national exercise, the Illinois Department of Public Health drafted a letter for signature of the Governor that temporarily suspended certain regulations affecting HCFs in the State. For example, the State Hospital Licensure Act was suspended, thus allowing licensed healthcare professionals to practice in HCFs where they were not currently credentialed.

2. ***Provide primary incident management*** in response to certain emergencies or disasters. State Government (led by the Governor or his/her designee) provides management oversight of a unified incident management team (UIMT) and directs response activities according to a State Emergency Operations Plan (EOP).[1] Scenarios that might necessitate State-based incident management include:

- Diffuse or widespread incidents involving multiple jurisdictions (but incorporating recognition of authority at the local level);
- Incidents requiring response assets that are primarily State resources (e.g., public health epidemiology expertise); and
- Public health incidents and other types of emergencies designated by State laws or regulations.

3. ***Coordinate among multiple States*** to promote a consistent response strategy across State boundaries. The State may also work with States not affected by a hazard to facilitate receipt and distribution of tactical mutual aid to affected communities. Interstate coordination is addressed in more detail in Tier 5.

4. ***Provide the requisite interface with Federal authorities*** so local jurisdictions can request and receive Federal support (see Tier 6). The Governor or his/her designee declares a formal public health or general emergency and adheres to established procedures to request, receive, and distribute Federal assistance to affected jurisdictions. These procedures should be defined during preparedness planning.

[1]This chapter does not examine specific components of the State EOP, since these will vary significantly from State to State. The focus instead is on the various roles States may have in catastrophic events.

5.2 State Emergency Management Program

State activities conducted through the EMA to mitigate, prepare for, respond to, and recover from emergencies or disasters constitute the State EMP.[2] It is recommended that the State EMP fully integrate public health and acute-care medical entities with other response disciplines (e.g., fire/EMS, emergency management). This will enhance special public health initiatives, such as bioterrorism preparedness programs, by promoting interdisciplinary cooperation and integration (Exhibit 5-2).

Exhibit 5-2. Integration of Health and Medicine in EMP Activities

State EMPs often include exercises to test the State EOP. Even if an exercise scenario does not have a primary health or medical focus, planners should include health and medical representatives at the outset of the exercise planning process. This enhances integration by allowing personnel from all disciplines to familiarize themselves with the plan and with each other. It may also benefit non-health responders, since almost every incident response has health and medical implications, even if they are not immediately realized. Information that contributes to maintaining the health of responders can be critical, regardless of whether the event involves human victims. An example would be health examination of food sources for field providers on an extended environmental incident.

An important aim of the State EMP should be to bridge any coordination gap that may exist between public health and public safety agencies. Because public health has evolved primarily as a *State-based* authority, it may be difficult during disaster or emergency response to effectively coordinate with public safety, which usually manages events from the *jurisdictional* government level. In addition, public health personnel historically are not well experienced in the IMS/ICS processes practiced by public safety and emergency management agencies. Therefore, preparedness planning should examine the operational methods necessary to integrate State public health with local emergency management and public safety during incident response.

The State EMP may contain *strategic* or "master" guidelines that govern *tactical* mutual aid arrangements.[3] The master guidelines stipulate

[2] The State EMP may be accredited through the Emergency Management Accreditation Program (EMAP), a *voluntary* process to assess EMPs through collaboratively developed national standards [1]. Additional information on EMAP is available at http://www.emaponline.org

[3] Mutual aid may be guided by "agreements," "memoranda of understanding," or other designations based on the degree of legal obligation desired by the mutual aid partners.

operational requirements for activation of tactical mutual aid (described in Section 5.3.2), such as standardized criteria for designated resources. As applied to medical assistance, master guidelines might specifically resolve such major issues as professional licensure, liability risk, worker compensation, and resource mobilization. Moreover, they should specify the processes to request and receive medical and health aid from other States.

5.3 Support to Local Jurisdiction Response

Because incident management is based primarily at the local level, the role of State Government in a mass casualty or complex incident is often to support the jurisdictional (Tier 3) response effort when local resources are severely challenged. This may come in the form of coordinating incident management activities among affected jurisdictions, and/or coordinating tactical mutual aid support.

5.3.1 Coordinating Multijurisdictional Incident Management

Response to multijurisdictional events can be greatly strengthened by coordinating incident management activities across affected jurisdictions. State-level incident support (Tier 4) should focus on facilitating information sharing via a robust State information management function. Important considerations for health and medical response may include:

- ***Standardized reporting requirements:*** States may develop processes to promote uniform reporting of medical and health issues from affected jurisdictions. These processes should be established by the State EMA (in coordination with State public health) during preparedness planning, and (at a minimum) they should address the following parameters:
  - *When to report:* The timing of reports should be announced to jurisdiction incident managers at the outset of a response, and should coincide with established operational periods to ensure that the information is included in the development of incident action plans (IAPs).[4]
  - *What to report:* Specific content needs should be determined that will be useful in coordinating the medical and health response across jurisdictions. Examples may include situation assessments, IAPs, and HCF status updates.

[4]Appendix C provides a more detailed description of action plans.

  - *Where to report:* It should be established during preparedness planning where reports should be transmitted and who the primary point of contact is at the State level (Tier 4).
  - *How to report:* Standardized formats should be used, if possible, to record pertinent information. This may greatly hasten the process of collecting, aggregating, and analyzing the data, and disseminating the information to affected jurisdictions (Tier 3).
- ***Standardized response actions:*** Operational tactics ("protocols") for patient triage, evaluation, and treatment can be shared across jurisdictions. Similarly, disease case definitions and medical advice for the concerned public should be coordinated. The intent is not to tell individual jurisdictions what to do, but to share what other jurisdictions are doing so they can make informed decisions about adjusting their practices, or prepare to explain response variance to patients and healthcare providers.
- ***Coordinated regional resources:*** State-level (Tier 4) authorities may coordinate with incident managers from intrastate jurisdictions on strategy for the optimal use of medical and health resources that are unevenly distributed across jurisdictions. A prime example is medical laboratories. Many States already coordinate these particular assets through the Centers for Disease Control and Prevention's Laboratory Response Network (LRN). Other resources (e.g., critical care transport, mass fatality services) should be similarly integrated.

5.3.2 Coordinating Tactical Mutual Aid

In a large-scale or complex incident, it is often necessary to obtain response resources from outside an affected jurisdiction to meet medical surge demands. Depending on the need, resources may come directly from the State (e.g., public health epidemiology expertise) or, more commonly, from an unaffected jurisdiction (e.g., medication supplies, critical care equipment). State Government can play a critical role in establishing processes for mutual aid distribution.

Important considerations for medical and health mutual aid include:

- ***Processes for requesting assistance.*** Describe the circumstances in which mutual aid can be requested, as well as specific procedures for making such requests. For example, master mutual aid guidelines may stipulate that an emergency or disaster must reach a specified threshold (i.e., it must be formally declared by the

Governor or his/her designee) before the State can issue a request for aid. Mutual aid arrangements should specify which officials are authorized to request/accept resources.

- ***Criteria for designated assets.*** Establish standardized specifications of expertise and/or the size of resources commonly requested through mutual aid. For medical and health disciplines, this might mean stipulating requisite qualifications for certain personnel (e.g., specialty training, licensure) and standardizing the description of a "unit," such as a critical care team (known as "resource typing" in NIMS). Since clinical titles vary across the United States, the necessary qualifications for assets should be clearly specified in the request. States may wish to stipulate that medical professionals filling the request include only certified practitioners, thereby avoiding deployment of students and physicians in training. Some States have already developed similar agreements concerning the sharing of personnel from other disciplines (Exhibit 5-3).

Exhibit 5-3. Emergency Managers Mutual Aid (EMMA)

While mutual aid agreements may be broad in scope and cover a variety of assets or personnel, some are written to address a very specific type of resource. California has established a mutual aid agreement for situations in which additional professional emergency management personnel are needed to assist with emergency response. This agreement, known as the EMMA Plan, describes processes for employing emergency managers from unaffected areas to support local or regional response efforts in affected communities [2]. It follows the basic framework of the California master mutual aid agreement, and addresses such issues as liability and staff training. Similar agreements could be established for medical or public health personnel under master mutual aid agreements that already exist in States.

The EMMA Plan may be accessed at:
http://www.oes.ca.gov/oeshomep.nsf/all/EMMA+Plan/$file/emma.pdf

- ***Transportation.*** Delineate how donated aid will be physically transported to a requesting facility. For medical personnel, this may include specifying to whom or where they will report, and what forms of identification they should bring (e.g., copy of State licensure). Mutual aid agreements should also address how patients will be transported between facilities and at what point responsibility for patient care is officially transferred.

- ***Reimbursement/compensation.*** Define how costs and charges will be assigned to the receiving jurisdiction or facility. This is important because emergency funds may provide needed financial relief for incurred expenses. In the case of personal injury to donated staff, the requesting facility usually assumes financial responsibility. Reimbursement is made to the workers' care program of the donor facility.
- ***Liability.*** Establish guidelines for the assumption of liability. Except in cases of gross negligence or willful misconduct, liability is usually accepted by the requesting facility. This issue is particularly important to address for medical providers.
- ***Documentation.*** Define necessary documentation to support the sharing of resources (e.g., standardizing time logs for deployed personnel, ensuring that patient records are transported).
- ***Notification to higher tiers.*** Delineate processes to notify other tiers when mutual aid is activated. Notification of the jurisdiction or State EOC is critical when any local mutual aid is activated, and information must be provided that describes the deployed mutual aid assets. This enables the jurisdictions and the State to track the availability of their response resources.

5.4 Primary Incident Management

In a catastrophic event (e.g., major earthquake or terrorist attack), State Government may assume primary responsibility for incident management. A common belief among many States is that the structure of the State EOC is adequate for *managing* medical and health response. In reality, however, this may not represent an ideal arrangement since the ESF structure and function are designed to *support* incident management (hence the name, Emergency Support Function). Thus, States that assume primary incident management authority should establish a separate incident management team, incorporating IMS principles, to manage response functions. This concept was effectively demonstrated by Illinois public health during TOPOFF 2 (Exhibit 5-4).

Exhibit 5-4. State Responsibility for Primary Incident Management

The State of Illinois response in Top Officials 2 (TOPOFF 2)—a bioterrorism exercise in May 2003—provides an excellent example of how a State can effectively assume primary incident management responsibility. In TOPOFF 2, Illinois successfully implemented a State public health Incident Management Post (IMP) that was supported by the nearby State EOC. This response organization demonstrated the significant *incident management responsibility* of State medical and health authorities in response to a major incident. It also emphasized that medical and public health managers can organize as incident managers, rather than attempt to manage from a support position in the State EOC.

The State's incident management team should be composed of State officials from across the range of response disciplines, including State medical and public health authorities. This team defines incident goals, objectives, and the overall response strategy for the State. In addition, the State performs the lead information management function. It collects data from intrastate jurisdictions (Tier 3), collates the data and conducts analyses, and then disseminates the aggregate information back to jurisdictional managers to provide the "big picture" of how the incident and response are unfolding.

In a catastrophic event, the role of the State as primary incident manager is relatively straightforward. However, in a subtle incident (e.g., onset of an unknown infectious disease), primary management will likely be based initially at the jurisdictional (Tier 3) level. As information begins to emerge on the potential size and scope of the incident, a decision might be made to transfer primary management authority to the State. This decision is made through a meeting of the jurisdiction UIMT or, if multiple jurisdictions are involved, a meeting of the lead agency authorities from the multiple jurisdictions as coordinated by the State.

The role of State political leaders in incident management should be clearly understood.[5] The Governor bears ultimate responsibility for the safety and well-being of the State population. For events with potentially serious medical or health implications, the Governor may declare a public health emergency; this activates the formal State health response. The Governor may also temporarily suspend certain laws or regulations

[5]Because the role of senior political authorities varies from State to State, readers are advised to review their respective State laws and regulations for State-specific information.

that impede response activities. Preparedness planning should identify regulations that might need to be revised or temporarily suspended and the legal procedures required to carry out these actions. In addition, as the elected spokesperson for his/her State, the Governor plays a critical role in public information management by:

- ***Maintaining public confidence.*** This is accomplished by providing the visible message that the State Government is focused on the incident response, has the intention to assist victims and their families, and is bringing all available resources to bear.
- ***Providing a context to the incident.*** In expressing community outrage and verbalizing the mass impact of the event, the political leader may help the community come together for both response and recovery.
- ***Establishing public expectations for the response.*** This is critically important in medical and health events, where response is often complicated and solutions are not easily or rapidly achieved. Regularly informing the public, and helping the public understand how to measure "progress" in complex events, can help to calm fears and minimize psychological impact.

State medical and public health officials should consider developing a briefing for the Governor and his/her staff that describes key MSCC management and response issues. One critical area to explain is that "measures of effectiveness" used to evaluate a medical response may not be directly related to obvious outcome measures, such as mortality or disease prevalence rates. This is because such measures may have been unalterably set in motion prior to incident recognition and response.

The Model State Emergency Health Powers Act (MSEHPA) provides one basic template for State authorities to define their major responsibilities in emergency or disaster response.[6] Developed after the September 11 attacks, MSEHPA suggests that States have a comprehensive plan in place for coordinated, appropriate response to incidents that threaten the public's health [3]. It identifies specific laws or regulations that may need to be developed (or revised if already existing) to protect the health and safety of the general population. Key issues addressed that may be relevant for health and medical response include:

[6]Additional information on MSEHPA can be accessed at the website of the Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities: http://www.publichealthlaw.net.

- Requirements for reporting illness or health conditions (including animal disease);
- Patient tracking and facility or materials examination;
- Examination and decontamination of facilities or materials;
- Information sharing;
- Quarantine and isolation of persons or property;
- Access to and disclosure of public health information;
- Licensing and appointment of health or medical personnel;
- Public information management; and
- Financial accounting, liability, and compensation.

5.5 Integration With Other Tiers

Management of the State response (Tier 4) requires effective integration of State public health and medical assets with jurisdictional incident management (Tier 3). This function may be provided under the guidance of State public health using the infrastructure capability (e.g., manpower, computing resources, communications equipment) of the State EOC.[7] In this way, State emergency management personnel collect and analyze public health and medical data generated by jurisdictional (Tier 3) unified management teams, as well as investigative findings from law enforcement and other agencies. The ability to examine these data, *in real time*, and rapidly return aggregate information to jurisdictions facilitates response planning and promotes a consistent multijurisdictional strategy. It also enables the State to maintain accurate and updated records of resource availability—a crucial factor in coordinating mutual aid support.

A challenging aspect of the State response is coordinating the efforts of multiple jurisdictions without infringing on their responsibility in incident management. This is best accomplished by establishing key information requirements for all State jurisdictions through the Plans/Information function. Standardized procedures should be developed for reporting medical and health data (i.e., what, when, where, and how) and for requesting mutual aid. Reports should include strategies and tactics being used by local jurisdictions through their jurisdictional IAPs.

[7] If the State is serving as the primary incident management authority, then its IMS Plans/Information function would provide this service.

This integrates the State with jurisdictional incident management (Tier 3) and facilitates coordination between affected jurisdictions. It also reduces the chance that conflicting strategies between jurisdictions may occur, causing anxiety and weakening public confidence in the response. A well-defined incident management function enables local medical and health providers to access guidelines for patient evaluation and treatment from State public health authorities. This capability can be critical in a rapidly evolving infectious disease outbreak.

The State (Tier 4) also provides the interface between jurisdictional management (Tier 3) and Federal health and medical assistance (Tier 6). For example, the State Governor makes the formal request to HHS or the Department of Homeland Security (DHS) for the Strategic National Stockpile (SNS) if the State health officer or State emergency management/homeland security officials identify a need for SNS assets.[8] If the SNS is deployed, State officials work closely with SNS coordinators and jurisdictional managers to coordinate its distribution to affected jurisdictions. The information management (i.e., knowing what support is needed) and incident management (i.e., working with local incident managers) functions facilitate this process.

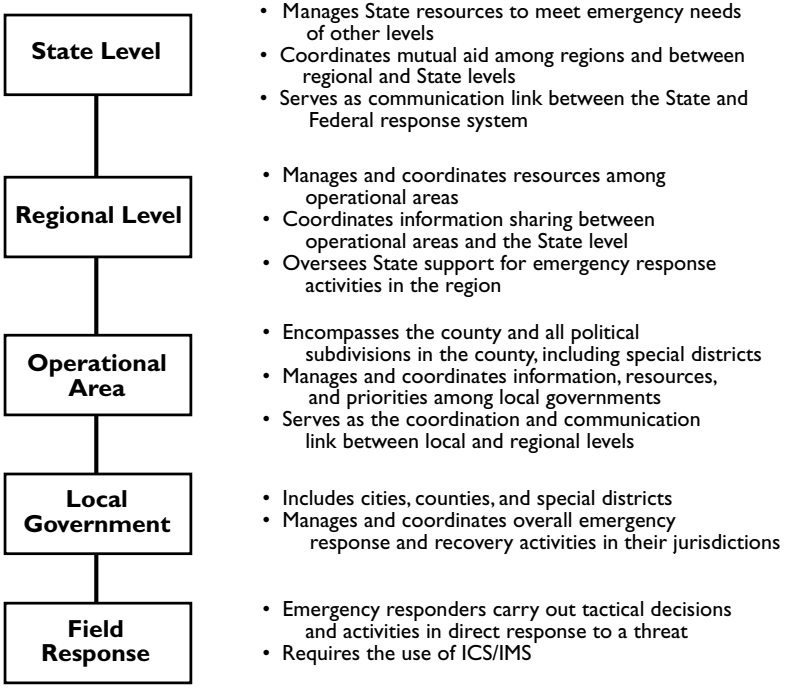
How a State organizes its emergency services to promote integration will depend on many factors, including its geography, population distribution, and historical hazard experience. Some States favor a decentralized approach with the expectation that most hazards will be managed by relatively sovereign local jurisdictions. Other States have established detailed State-driven management procedures that are outlined in extensive regulations. The Standardized Emergency Management System (SEMS) in California provides an excellent example of the latter situation and is briefly described here.

California established SEMS in the early 1990s as a Statewide management system for use by public safety personnel (e.g., firefighters, police) and other emergency responders. State agencies are required by law to use SEMS for incidents involving multiple agencies or multiple jurisdictions. In addition, local governments must use SEMS in multiagency or multijurisdiction response to be eligible for State reimbursement for response-related personnel costs [4]. SEMS is flexible

[8]The role of the Federal Government in supporting State and local incident management is described in more detail in Chapter 7. Additional information on the Strategic National Stockpile can be accessed at: http://www.bt.cdc.gov/stockpile/index.asp.

to meet the demands of all hazards, and it is based on ICS/IMS functions (Management, Operations, etc.) and a five-level organization of response (Figure 5-1).

Figure 5-1. Generic SEMS Management Structure



Information abstracted from Standardized Emergency Management System (SEMS) Guidelines for Special Districts. Available at: http://www.oes.ca.gov

Although SEMS provides a well-developed organization for *public safety* emergency services, it does not comprehensively address the incorporation of public health or private medical assets as the primary responders and incident managers. In addition, SEMS generally assumes a defined incident scene and relies on this to organize the initial response structure (this is understandable given the major hazard risks in California). However, because a defined scene is much less likely in a public health emergency, additional organizational guidance may prove helpful. The MSCC Management System was written to provide such guidance.

5.6 Illustrative Example

The following example demonstrates how the concepts presented in this chapter may be applied during an actual incident response. The various phases of response (as described in Chapter 1) highlight when critical actions should occur; however, the example extends only as far as incident response, as this is the focus of the MSCC Management System.

Background and Incident Description

- State Alpha is a southern State on the U.S. coast.
- A large Category 4 hurricane has struck the State, devastating multiple jurisdictions along the coast with extensive structural damage and flooding.
- In at least three separate low-lying jurisdictions with high population densities, HCFs have had their normal operations disrupted due to flooding.

In this scenario, the early stages of response unfold well before the event occurs:

- **Incident recognition** occurs several days prior to landfall when the National Weather Service issues a hurricane warning for the coast of State Alpha.
- **Notification/activation** occurs when the State EMA notifies State emergency response agencies, private response assets (e.g., HCFs), and the general public, and issues practical preparedness recommendations.
- **Mobilization** of State emergency/disaster services is characterized by the following steps:
  - The primary IMP is established at the State's EOC. State-level incident management is now co-located with, but physically separate from, its emergency management operations support at the EOC.
  - A UIMT composed of representatives from the primary response disciplines is established at the IMP. A senior health officer from the State's Department of Health (DoH) serves on the UIMT to represent health and medical issues.

- The State ensures that weather-resistant communications are operating between the IMP/EOC and jurisdictional EOCs. The State issues short-term preparedness recommendations for State-level response agencies, and calls on jurisdictions directly in the storm's path to provide immediate post-landfall damage and needs reports. Instruction is given on what to include in reports, where they should be sent, and how to format the information.

Response is initially characterized by full evacuations of coastal areas and the pre-positioning of State response resources. State action plans are issued for the two 24-hour operational periods preceding landfall. As the storm approaches, State Alpha switches to 12-hour planning cycles and fully staffs its IMP/EOC.

In the aftermath of the hurricane, affected areas report on storm-related injuries and physical/structural damage. It is quickly recognized that regular and emergency medical care has been compromised at multiple hospitals in several jurisdictions. The State UIMT assumes a primary incident management role and establishes incident objectives and response strategies. The State incident action plan (IAP) is developed and shared with affected jurisdictions, with other States (Tier 5), and with the Federal assistance liaison (Tier 6). This promotes the "common operating picture" described in NIMS. A key component of the State IAP is a health and medical section that includes:

- Health and medical situation assessments and resource status from data collected daily by affected jurisdictions;
- Input into the safety message that includes public information messages to address such issues as displaced populations of wildlife and the handling of water in affected areas.

Based on initial reports, the State UIMT anticipates that local jurisdictions will need support and thus offers medical and health resources to assist with unmet needs. State medical assets are provided to support the incident response being managed in the most heavily affected jurisdictions. This includes a State-sponsored Disaster Medical Assistance Team (DMAT). In addition, State medical and health personnel are deployed to support locally affected health departments. They integrate through the jurisdictional (Tier 3) Logistics function and are assigned to the appropriate Operations function in the jurisdictional IMS.

State Alpha's Governor and State health officer temporarily suspend, through emergency declarations, selected State health regulations. This action allows for:

- Relaxation of restrictions on hospital bed capacity in the most heavily affected jurisdictions so facilities that are still operational can "legally" care for more victims than their State license stipulates.
- Temporary replacement of State licensing and certification regulations for healthcare professionals by emergency regulations developed in preparedness planning. This permits HCFs to accept evidence of licensure from other States and allows medications to be dispensed by healthcare personnel other than physicians, nurses, or pharmacists.
- Establishment of several convenient locations where out-of-State healthcare personnel who want to volunteer in the response can report for screening, provide their professional credentials, and receive temporary credentials from State Alpha. This removes the credentialing burden from jurisdictions and local HCFs.

One jurisdiction that was not fully evacuated has temporarily lost use of its primary outpatient and its inpatient dialysis centers. Mutual aid is arranged to provide dialysis services using resources from an unaffected jurisdiction. This is accomplished through the State EOC's Emergency Support Functions (ESFs) and involves transportation to move personnel and equipment, public works to arrange for a clean water source for the dialysis machines, and other details. The State also provides a financial guarantee to the assisting jurisdiction, as well as reporting guidelines so Federal reimbursement may be obtained.

The State also facilitates coordination between affected local jurisdictions (Tier 3). Situation assessment and resource status reports are collected from affected jurisdictions and collated to provide summary health and medical information for the State. These aggregate data are included in the State IAP. State public health authorities provide case definitions for reporting storm-related injuries or illnesses. Included in this message is guidance for reporting gastrointestinal complaints. This becomes critical later to counter rumors about the outbreak of infectious disease.

Lastly, State Alpha coordinates with other nearby States (Tier 5) and with Federal emergency support agencies (Tier 6). Jurisdictional health and medical needs that cannot be met through local resources or tactical mutual aid are reported to the State EOC. The State rapidly evaluates the requests and attempts to meet them using assets within State Alpha. For requests that cannot be met by the State, the State EOC inquires from its regional partners (Tier 5) and/or forwards a request for assistance to Federal authorities. For example, when all three affected jurisdictions request medical teams to provide out-of-hospital patient evaluation and medical care, the State-sponsored DMAT can only fill one jurisdiction's request. Thus, additional resources are requested from Federal agencies.

5.7 References

[1] National Fire Protection Agency. NFPA 1600: Standard on Disaster/ Emergency Management and Business Continuity Programs, 2004 Edition. Accessed June 7, 2004, at http://www.nfpa.org/PressRoom/NewsReleases/NFPA1600/nfpa1600.asp.

[2] Emergency Managers Mutual Aid (EMMA) Plan. California Office of Emergency Services, November 1997. Accessed December 18, 2003 at: http://www.oes.ca.gov/oeshomep.nsf/all/EMMA+Plan/$file/emma.pdf

[3] The Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities. The Model State Emergency Health Powers Act. December 21, 2001; Available at: http://www.publichealthlaw.net (Accessed December 21, 2003).

[4] Office of Emergency Services, California. Standardized Emergency Management System (SEMS) Guidelines for Special Districts (1999); Accessed April 20, 2004 at: http://www.oes.ca.gov

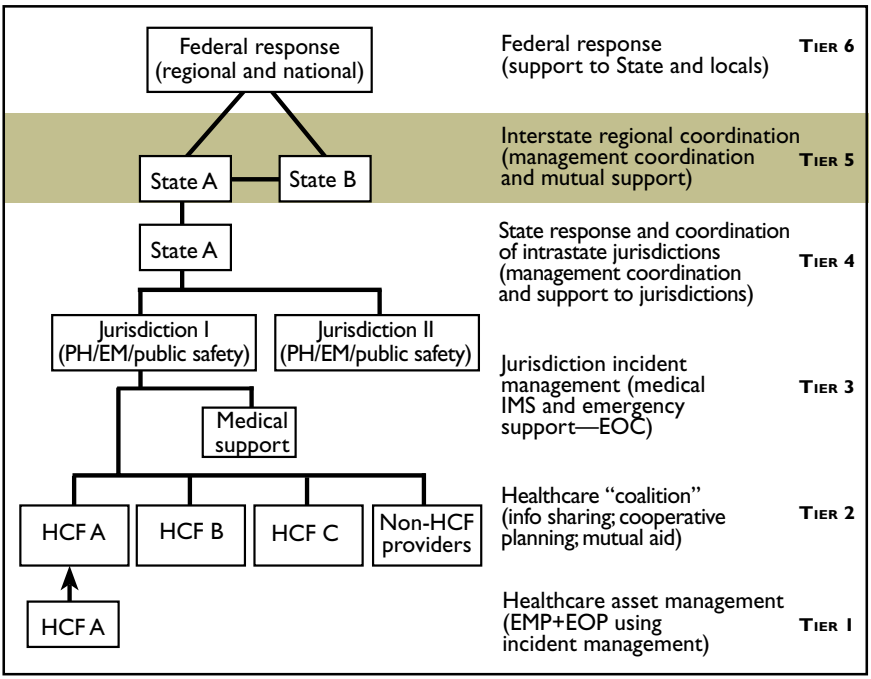
NOTES

NOTES

Chapter 6:
Interstate Regional Management Coordination (Tier 5)

Contents

Interstate Regional Management Coordination (Tier 5)



Tier 5 describes the processes by which States assist one another and coordinate management and response activities during times of crisis. It includes State-level agencies that oversee emergency management, public health, medical, and public safety emergency preparedness and response.

KEY POINTS OF THE CHAPTER

During a catastrophic event, interstate coordination is an effective and often necessary means to acquire adequate MSCC. Collaborative efforts between States promote system-wide consistency in response strategies and ensure optimal utilization of available health and medical resources. An effective regional response must be rooted in an open exchange of information, incident management coordination, and mutual aid support, as described below:

- ***Information sharing.*** Before addressing communications technology, States must establish what type of information is important to share, and to whom that information should be provided. These information "requirements" generally include:
  - Overarching management strategies and specific tactics;
  - Situation and resource assessments; and
  - Safety information for responders and the public.
- ***Management coordination.*** Incident action plans and support plans should be shared between incident managers while these plans are still in developmental stages. This will help identify potential areas of conflict in response strategy between States and allows for corrective action before such conflicts undermine the success of the overall response system.
- ***Mutual aid.*** This describes the provision of emergency services and assets to provide MSCC when individual State resources are insufficient to meet surge demands. Strategic mutual aid guidelines provide the general framework for tactical mutual aid agreements between States. The latter specify operational processes for requesting, receiving, and managing emergency support assets.

The Emergency Management Assistance Compact (EMAC) provides a vehicle for regional coordination and mutual aid during a declared emergency or disaster. Health and medical assistance is specifically noted in EMAC, and emergency health and medical planners are encouraged to review EMAC and how it is being implemented in their State as part of their preparedness activities.

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6.1 The Role of Interstate Coordination in MSCC

Legal and political realities dictate that each State bears ultimate responsibility for the safety and welfare of its citizens. In times of crisis, however, it may be necessary for States to share information and resources with one another to support a coordinated response. The need for interstate coordination and mutual aid assistance is driven by several factors:

- Few States, if any, possess the full range of resources necessary to respond to all types of emergencies (natural or man-made), or the capability to get resources to areas of greatest need.
- Population growth near State borders has significantly increased the potential for hazard impacts to spread across State boundaries.
- An increasingly mobile workforce in the United States raises the probability that the onset of certain delayed hazards (e.g., biological, chemical, or radiological agents) may actually manifest more prominently in victims who live outside the area of immediate impact.
- Omnipresent media coverage easily spotlights discrepancies in the response actions of affected jurisdictions or States. Reports of such discrepancies may erode public confidence and cause undue anxiety in the population (Exhibit 6-1).

Exhibit 6-1. The Implications of Interstate Incident Strategy Conflict

A stark example of the problems with conflicting interstate response strategies was evident in the National Capital Area when West Nile Virus arrived in the summer of 2000. Montgomery County, Maryland, elected to spray for mosquitoes when the virus was detected in a mosquito pool on the border with the District of Columbia. In contrast, the District followed expert advice and elected not to spray. The conflicting policies and their rationale were not explained to the public until a media controversy erupted, causing significant public unrest that consumed public officials' time and attention.

Interstate coordination is an effective way to promote the optimal distribution of available medical and public health resources in support of overall MSCC. It enables affected States to share information, including incident goals and objectives defined by management, so that a consistent response strategy can be implemented across State borders.

To be effective, interstate coordination must entail:

- Open and reciprocal information exchange regarding incident and response parameters;
- The ability to compare and discuss action plans (APs) for individual States, *as they are developed;*
- An understanding that creating consistency among State APs and proactively addressing apparent interstate discrepancies enhance the overall response system; and
- Effectively using the coordination platform to provide assistance, such as cross-border mutual aid.

6.2 Forms of Interstate Assistance

Three primary methods for interstate assistance during emergency or disaster response are information sharing, incident management coordination, and mutual aid. At a basic level, *information sharing* is critical because it allows States to stay up to date on how an incident is unfolding, how other States (Tier 4) or jurisdictions (Tier 3) are responding, and what resources have been committed or remain available. *Incident management coordination* builds consistency in regional strategies and promotes similarity in the development and application of operational tactics. *Mutual aid* maximizes MSCC by bringing materials, personnel, and/or services to areas where resources are insufficient to meet surge demands.

6.2.1 Information Sharing

While the importance of sharing information and data with other affected States, *in real time,* is easily recognized, most efforts to address this issue have focused on communications technology. A major shortcoming of these efforts is that they neglect to first establish what type of information is important to share, where to obtain it, and who needs to receive it; these requirements should be set during preparedness planning. The types of information to share include:

- ***Situation assessments*** provide general incident information regarding public health and medical issues, as well as specific epidemiological information that may be useful in developing respective State APs.
- ***Resource assessments*** provide updates on the status of resources that are committed to the response and those that remain available. This helps managers or officials from other States gauge the severity of hazard impact, as well as the potential impact that may occur if people evacuate an area. It also provides a means to anticipate likely requests for mutual aid.
- ***General strategies and specific tactics*** offer insight into how a State's effort is organized. This is beneficial to other States that may be confronted with similar problems and promotes resolution of conflicting tactics before such discrepancies are highlighted by the media.
- ***Safety information*** describes State or jurisdictional approaches to health and medical issues affecting responders (such as recommendations for vaccination or medication prophylaxis). This can help standardize safety protocols for responders across disciplines and State boundaries.

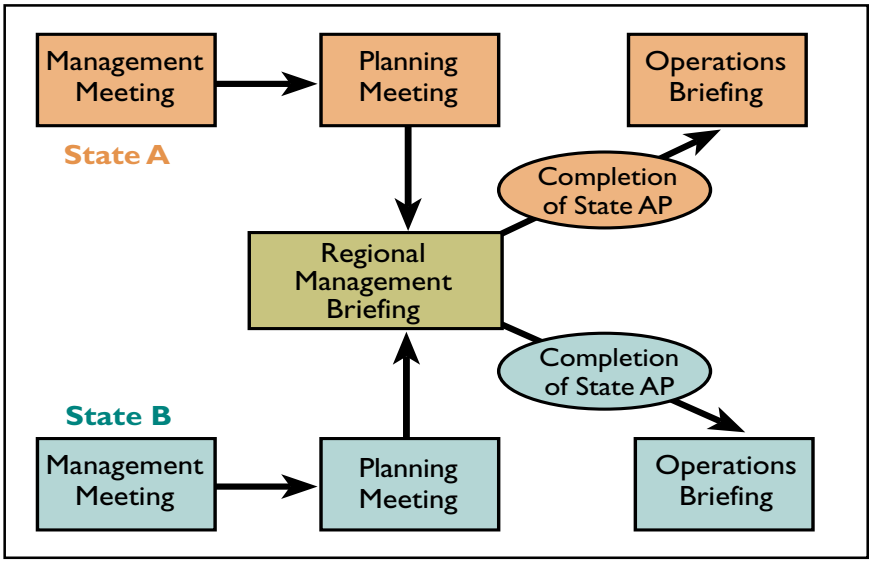
Public health and medical disciplines face a unique challenge because of the complexity and quantity of information that must be shared during a major response. This is compounded by the presence of multiple information outlets, many of which provide unofficial data. For example, media trying to "break" news stories may provide situation assessments that misrepresent the actual severity of an incident or the progress of response. Therefore, information that is shared between States should be channeled first through formal mechanisms at the State level (Tier 4) to verify its accuracy. This is commonly done by releasing all information through the State public health agency or the State Emergency Operations Center (EOC).

6.2.2 Incident Management Coordination

Because of State sovereignty, the management processes for interstate coordination (Tier 5) differ appreciably from those used to manage the intrastate response (Tier 4). There can be no single command authority to oversee regional response and to promulgate incident objectives, strategy,

and tactics. Instead, regional response must rely on the *coordination* of State incident management and mutual aid. This is accomplished by comparing State APs and contingency or long-range plans while they are still in developmental phases. Regional management briefings between incident managers (conducted remotely via teleconference) could be held to ensure consistency in major strategic decisions, and in the development of incident objectives and operational tactics (Figure 6-1).

Figure 6-1. Regional Management Coordination Between States



The key is to establish the regional management processes for interstate coordination during preparedness planning, and to develop the infrastructure required for coordination to work under the stress of an actual incident. *Infrastructure in this sense includes not just interoperable communications and other equipment, but also legislative and regulatory parameters needed for responders to work seamlessly together across State borders.* Once established, these processes and infrastructure should be integrated into standard operating procedures.

6.2.3 Interstate Mutual Aid

Strategic mutual aid agreements between States address the "top-line" issues related to the transfer of materials, supplies, equipment, and personnel across State borders. Issues commonly addressed in strategic guidelines include:

- ***Asset command and control.*** Requested emergency assets continue to operate under the command and control of their regular unit leaders. However, they receive direction on incident objectives and specific assignments (e.g., what they do and to whom the unit leaders report) from the emergency services authorities of the State receiving assistance.
- ***Professional competency.*** The State receiving assistance generally shall recognize a license, certificate, or other competency document issued by another State that indicates professional, mechanical, or other qualifications.
- ***Liability.*** The State receiving assistance generally assumes liability for any act or omission, made in good faith, or on account of the maintenance or use of any equipment or supplies rendered by emergency responders from another State. This does not include actions of willful misconduct, gross negligence, or recklessness.
- ***Worker compensation.*** States shall provide compensation and death benefits to injured emergency personnel or their designated representatives in the event such personnel are injured or killed while rendering aid in another State. This compensation shall be made in the same manner and on the same terms as if the injury or death were sustained within the person's home State.
- ***Reimbursement.*** The State receiving assistance shall reimburse the State donating aid for all costs and expenses incurred in answering a request for aid, including worker compensation.

As noted in Chapter 5, information contained in *strategic* mutual aid agreements guides the development of *tactical* mutual aid agreements between States. Tactical agreements provide the specific operational processes (the "nuts and bolts") for how mutual aid will occur during an actual response. Issues commonly addressed in tactical aid agreements include:

- Specific methods for aid requests and acceptance;
- Mutual aid tracking mechanisms;
- Tactical management of mutual aid assets;
- Processes for licensure waivers; and
- Notification requirements to States when a mutual aid request is extended and when interstate mutual aid deployment occurs.

How these issues are addressed will vary from State to State; however, basic information that should be included in any request for assistance is highlighted in Exhibit 6-2.

Exhibit 6-2. Key Components of Mutual Aid Requests

- A description of the emergency service function for which assistance is needed, including but not limited to:
  - Fire services;
  - Law enforcement;
  - Emergency Medical Services (EMS);
  - Health and medical services;
  - Transportation;
  - Communications;
  - Public works and engineering;
  - Building inspection;
  - Planning and information assistance;
  - Mass care;
  - Resource support; and
  - Search and rescue.
- The amount and type of personnel, equipment, materials and supplies sought, and an estimate of the length of time they will be needed; and
- The specific place and time where the assisting State should provide the requested assets, as well as a point of contact at that location.

6.3 EMAC: A Model for Regional Coordination

The Emergency Management Assistance Compact (EMAC) provides a general framework (and legal basis) for interstate coordination and mutual aid during declared emergencies or disasters.[1] It also provides for interstate cooperation and resource sharing in emergency-related training, drills, and exercises. Important preparedness and response issues addressed in EMAC include:

- Review of State emergency plans and hazard vulnerability analyses;
- Provisions for temporary suspension of any laws or ordinances;
- Licensure and permit waivers for medical and other professionals;
- Assumption of liability risk for donated personnel rendering aid;
- Reimbursement for assistance (e.g., personnel, equipment, and supplies);
- Compensation for workers killed or injured while rendering aid; and
- Interstate evacuation of the civilian population.

EMAC recognizes State sovereignty by requiring participant States to pass legislation that establishes the methods for interstate cooperation. Since its approval by Congress in 1996 (Public Law 104-321), 48 States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands have enacted EMAC legislation. Public health and medical planners should understand how (or if) EMAC is being implemented in their State and be directly involved in establishing processes to ensure coordination of health and medical assets in support of MSCC.

6.4 Illustrative Example

The following example demonstrates how the concepts presented in this chapter may be applied during an actual incident response. The various phases of response (as described in Chapter 1) highlight when critical actions should occur; however, the example extends only as far as incident response, as this is the focus of the MSCC Management System.

[1] Additional information on EMAC is available at: http://www.emacweb.org.

Background and Incident Description

- A large chemical factory that produces plastics resides in the far eastern corner of State Alpha. State Beta is adjacent to State Alpha and is "downwind" of State Alpha on the day in question.
- An explosion occurs at the factory, starting a fire that is difficult to control. Victims are coughing and complaining of breathing difficulties.
- Large clouds of smoke, possibly containing combustion products, such as phosgene and other pulmonary irritants, are released into the atmosphere and carried downwind toward State Beta. The local fire service and a hazardous materials (HAZMAT) team respond to the scene.

Incident recognition at the State level occurs for State Alpha (where the explosion occurred) when the responding jurisdiction reports the findings of an initial HAZMAT scene survey to the State's Environmental Protection Agency (EPA) HAZMAT reporting center. State Alpha begins staffing its State EOC and notifies participating agencies that the State Emergency Operations Plan (EOP) is activated. The initial HAZMAT report forms the basis of State Alpha's notification of EOP activation.

For State Beta, incident recognition occurs when State Alpha's HAZMAT responders notify the fire service/HAZMAT team in the adjoining jurisdiction of State Beta using tactical channels established in preparedness planning. They decide that unified incident management should be set up to coordinate the evacuation of the at-risk population.

Notification/activation of the interstate response occurs through the aforementioned tactical coordination between local fire/HAZMAT units from State Alpha and State Beta. In addition, State Alpha directly notifies State Beta's Emergency Communications Center (ECC), which serves as the pre-event baseline operating entity for State Beta emergency management. State Beta immediately activates its State EOC and notifies participating agencies in its State EOP.

Mobilization of the interstate response occurs as State Alpha and State Beta activate and ramp up staffing at their respective State EOCs, and activate their State-level incident management teams.

Response is characterized by initial reports from the affected jurisdiction in State Alpha of large numbers of respiratory injuries that have overwhelmed the local healthcare facility (HCF). Fortunately, this HCF is upwind of the area of concern and does not need to evacuate or consider sheltering in place. The HCF has activated its EOP and requested and received assistance from community medical providers, as well as from its mutual aid agreement with a hospital located ten miles away.

State Alpha provides regular updates to State Beta's EOC regarding firefighters' progress in suppressing the fire and smoke, in determining the exact contents of the noxious smoke, and in plotting plume models as wind conditions at the scene change. In addition, State Alpha provides information to State Beta on the conditions of patients presenting at State Alpha hospitals, including symptoms correlated with positions where the victims were exposed. When State Beta requests to send its HAZMAT experts to the scene, State Alpha's EOC arranges for an escort from the fire marshal's office in State Alpha to facilitate scene evaluation by State Beta experts.

The heavily affected jurisdictions in State Alpha and State Beta decide to continue with a unified area command to manage joint issues caused by the smoke. State Alpha supports this initiative by supplying a command vehicle and medium-range communications equipment for use in the affected areas. This is closely coordinated with management in State Beta's EOC. Strategies and tactics, such as decisions to evacuate or shelter-in-place, are also coordinated between State Alpha and State Beta to avoid conflicting recommendations. Any differences are explained to the public in simple terms to prevent confusion. Similarly, medical evaluation and treatment protocols for victims are coordinated with input from both States' health agencies. As the situation improves, recommendations for re-populating evacuated areas or ending shelter-in-place are consistently developed and applied across State boundaries.

State Alpha requires additional assistance for the local hospital that is caring for the majority of incident victims. It is determined that healthcare assets in State Beta can actually provide the necessary help faster than assets that could be obtained through intrastate mutual aid. Therefore, State Alpha's EOC asks for assistance from State Beta for critical care personnel and ventilators. This is accomplished using protocols and procedures developed during preparedness planning and based on EMAC authorities.

State Beta notifies its Medical Reserve Corps and hospitals near its border with State Alpha. The requested resources are located and dispatched. The strategic mutual aid agreement between State Alpha and State Beta provides for:

- Waiver of licensure and certification requirements in State Alpha for State Beta responders who are appropriately credentialed in State Beta;
- Extension of liability coverage by State Alpha to State Beta for workers as long as they operate within their defined scope of practice; and
- Extension of worker compensation coverage by State Alpha to healthcare workers who respond from State Beta.

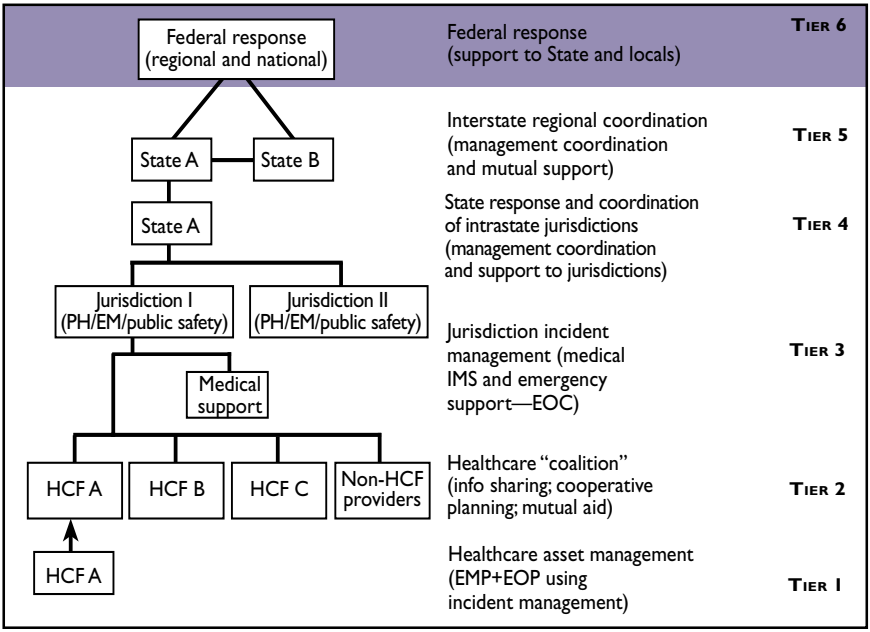
NOTES

NOTES

Chapter 7:
Federal Support to State and Jurisdiction Management (Tier 6)

Contents

Federal Support to State and Jurisdiction Management (Tier 6)



Tier 6 consists of Federal health and medical assets (e.g., supplies, equipment, facilities, and personnel) that are organized for response to Federally declared public health and medical emergencies or disasters under Emergency Support Function #8 (ESF #8) of the National Response Plan (NRP). The Department of Health and Human Services (HHS) is the Primary Agency for ESF #8 and coordinates all Federal public health and medical assistance provided through ESF #8 in support of State, Tribal, and jurisdictional[1] response efforts.

[1]In the context of this handbook, *jurisdiction* refers to a geographic area's local government, which commonly has the primary role in emergency response. See the glossary (Appendix D) for a definition of local government.

Key Points of the Chapter

Federal health and medical assistance during emergencies or disasters is provided under ESF #8 of the NRP, or through the independent authority of HHS.[2] This assistance can be activated by a Presidential disaster declaration, by declaration of a public health emergency through the independent authority of the Secretary of HHS, or at the request of another Federal department or agency. The primary role of Federal resources in providing medical surge capacity and capability (MSCC) is to *support*—not supplant—State, Tribal, and jurisdictional response efforts.

On behalf of the Secretary of HHS, the Assistant Secretary for Public Health Emergency Preparedness (ASPHEP) coordinates all Federal public health and medical assistance under ESF #8 from the Secretary's Command Center (SCC). The SCC is the primary site of information management for ESF #8, providing liaisons to appropriate Federal command and control posts listed in the NRP (e.g., Homeland Security Operations Center (HSOC), National Emergency Operations Center (NEOC), and the Interagency Incident Management Group (IIMG)). The HHS Secretary's Emergency Response Team (SERT), which is mobilized by the ASPHEP, represents HHS in all interactions with State, Tribal, and jurisdictional (Tier 3) incident management, as well as with other Federal agencies that are deployed to a disaster area. All field communication to the SCC is channeled through the SERT.

During a public health or medical emergency, the ASPHEP may request that liaisons from HHS Operating Divisions (OPDIVs)[3] be provided to the SCC to coordinate response actions across the Department. Similarly, HHS may provide liaisons to other Federal, State, and jurisdictional Emergency Operations Centers to promote response coordination. Preparedness activities must examine the processes that will be used to request, receive, and manage Federal support. It will be important for State, Tribal, and jurisdictional health and medical planners to precisely determine their response capability, when they might need Federal support, and how they would integrate Federal assets into their incident management system.

[2]At the time of this writing, the NRP is being developed to replace the Federal Response Plan (FRP).

[3]HHS OPDIVs include National Institutes of Health (NIH); Food and Drug Administration (FDA); Centers for Disease Control and Prevention (CDC); Indian Health Service (IHS); Health Resources and Services Administration (HRSA); Substance Abuse and Mental Health Services Administration (SAMHSA); and the Agency for Healthcare Research and Quality (AHRQ).

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7.1 The Role of the Federal Government in MSCC

When incident demands severely challenge the response capability of State, Tribal, and jurisdictional governments, Federal resources may be called on to provide additional surge capacity and capability. When this occurs, Federal agencies and resources function in *support* of the State, Tribal, and jurisdictional response efforts. The authority for Federal public health and medical response may come from a formal Presidential declaration of a major disaster or emergency (activation of the Robert T. Stafford Disaster Relief and Emergency Assistance Act), from a declaration of a Federal public health emergency by the Secretary of HHS, as authorized under the Public Health Service Act, or at the request of another Federal agency.

- ***Robert T. Stafford Disaster Relief and Emergency Assistance Act:*** At the request of the Governor of an affected State, the President may declare a major disaster or emergency if an event is beyond the combined response capabilities of the State, Tribal, and jurisdictional governments. Among other things, this declaration allows Federal assistance to be mobilized and directed in support of State, Tribal, and jurisdictional response efforts.
- ***Public Health Service Act:*** As amended by the U.S. Patriot Act, the Homeland Security Act, and the Public Health Security and Bioterrorism Preparedness and Response Act, the Secretary of HHS may exercise independent authority to declare a state of public health emergency. The Secretary of HHS may use his/her discretion to determine if an event is of sufficient severity or magnitude to represent a public health emergency.

Federal public health and medical assistance may come in the form of medical materiel, personnel, or technical assistance. These resources may provide response capability for the triage, treatment, and transportation of victims, evacuation of patients from a disaster area, infection control, mental health counseling, environmental health services, and other emergency response needs. Exhibit 7-1 highlights the full range of support available through ESF #8. A variety of Federal public health and medical assets may be provided, such as the National Disaster Medical System (NDMS), the Public Health Service Commissioned Corps, the

Strategic National Stockpile (SNS), and assets from the Department of Veterans Affairs (VA), the Department of Defense (DOD), Tribal Hospitals, and other Federal assets.

Exhibit 7-1. Functional Areas for Federal Health and Medical Support

ESF #8 involves supplemental assistance to State, Tribal, and jurisdictional governments in identifying and meeting the public health and medical needs of victims of major disasters or public health emergencies. This support is categorized in the following functional areas:

- Assessment of public health/medical needs;
- Public health surveillance;
- Medical care personnel;
- Medical equipment and supplies;
- Patient movement;
- Hospital care;
- Outpatient services;
- Victim decontamination;
- Safety and security of human drugs, biologics, medical devices, veterinary drugs, etc.;
- Blood products and services;
- Food safety and security;
- Agriculture feed safety and security;
- Worker health and safety;
- All hazard consultation and technical assistance and support;
- Mental health and substance abuse care;
- Public health and medical information;
- Vector control;
- Potable water/wastewater and solid waste disposal, and other environmental health issues;
- Victim identification/mortuary services; and
- Veterinary services.

7.2 Federal Emergency Management Program

The NRP[4] establishes the structure and process for the systematic, coordinated, and effective delivery of Federal assistance to augment State, Tribal, and jurisdictional response capabilities. It describes the types of Federal resources that are available to mitigate, prepare for, respond to, and recover from major emergencies and disasters, and it outlines a methodology for mobilizing and integrating Federal assistance. The types of direct Federal assistance that States, Tribes, and jurisdictions may need, as well as the operations support required to sustain Federal response (e.g., transportation, communications) are organized in the NRP under Emergency Support Function (ESF) annexes. Each ESF is coordinated by a Primary Agency designated on the basis of its authorities, resources, and capabilities in the particular functional area.

Federal public health and medical assistance is provided under ESF #8 and is coordinated by HHS. As the Primary Agency for ESF #8, HHS coordinates the provision of Federal public health and medical resources to fulfill the requirements identified by the affected State(s), Tribe(s), and jurisdictional authorities.

Spurred by the September 11 terrorist attacks, the U.S. Government has made, and continues to make, sweeping changes to the processes by which Federal disaster assistance, including public health and medical assistance, is integrated into State, Tribal, and jurisdictional incident management. A prime example of this change is the development of the NRP, which integrates the various operational processes, procedures, and protocols from existing Federal emergency plans into one all-discipline, all-hazards plan. The NRP links the following emergency plans:

- Federal Response Plan;
- U.S. Government Interagency Domestic Terrorism Concept of Operations Plan;
- Federal Radiological Emergency Response Plan;
- Mass Migration Emergency Plan (Distant Shore); and
- National Oil and Hazardous Substances Pollution Contingency Plan.

[4]An initial version of the NRP was completed in September 2003, and the full NRP is expected to be completed by the end of 2004.

The Initial NRP (I-NRP) promulgates certain changes to the Federal response structure that should be understood by public health and medical emergency planners at State, Tribal, and jurisdictional levels. For example, it establishes the Homeland Security Operations Center (HSOC), located at the Department of Homeland Security (DHS) in Washington, DC, as the national hub for operational communications and information for domestic incident management. The HHS-SCC provides a full time liaison to HSOC to coordinate closely with DHS on issues of domestic preparedness and incident management. State and Tribal Governments, as well as emergency management agencies, are requested to report to the HSOC:

- Activation of State EOCs;
- Announcement of emergency declarations made under State or local authority; or
- Activation of State mutual aid agreements in response to incidents resulting in emergency declarations or requiring Federal assistance.

The companion to the NRP is the National Incident Management System (NIMS). NIMS facilitates multidisciplinary and intergovernmental incident management by establishing common processes, terminology, uniform personnel qualifications, and the equipment and communications standards necessary for interoperability and compatibility. The Incident Command (Management) System (ICS/IMS) is put forth by NIMS as the model for organizing and managing emergency personnel and resources during incident response.[5] NIMS requires that field command and management functions be performed in accordance with a standard set of ICS/IMS organizations, doctrine, and procedures.

7.3 Federal Emergency Operations Plan

As the Primary Agency under ESF #8, HHS has developed an internal Concept of Operations Plan (CONOPS) that provides a framework for its management of public health and medical emergencies. The CONOPS is complementary to the NRP and covers all mitigation, preparedness, response, and recovery activities carried out by HHS, whether resulting from a Stafford Act declaration, independent authority of HHS, or at the request of another Federal department or agency. On behalf of the

[5]Appendix B describes IMS and its application to public health and medical disciplines.

Secretary of HHS, the ASPHEP directs and coordinates all Federal public health and medical assistance provided under ESF #8. The ASPHEP also acts as the HHS liaison with DHS and other Federal agencies.

The ASPHEP coordinates the national ESF #8 response effort from the SCC, which is located at HHS headquarters in Washington, DC. The SCC provides a focal point for command and control, communications, specialized technologies, and information collection, assessment, analysis, and dissemination for all HHS components under emergency and non-emergency conditions.[6] By maintaining operations 24/7, the SCC is able to rapidly enhance its services and staffing during times of crisis. When not in an emergency response mode, the SCC performs continuing surveillance of:

- Public health data for special topics (e.g., West Nile Virus, influenza activity);
- Reports from HHS OPDIVs and other ESF #8 agencies that support State, Tribal, and jurisdictional incident management; media reports and other mass public information sources; and
- Natural disasters (e.g., hurricanes, earthquake activity).

Some HHS OPDIVs, such as the CDC, maintain EOCs separate from the SCC to manage their own assets. OPDIV EOCs can be activated separately from the SCC when involved in a small-scale or "routine" response that does not require Department-wide coordination. When an OPDIV EOC is activated (only the SCC and the CDC EOC are operational 24/7), the EOC must notify the SCC and provide status updates of activities. For a Department-wide response, the OPDIV EOCs coordinate their operational information with the SCC to establish a single Departmental response. Staffing the SCC with experts from the various OPDIVs also enhances Departmental coordination.

To promote coordination across Federal agencies, HHS also provides daily liaisons to DHS HSOC and to the Federal Bureau of Investigation's National Joint Terrorism Task Force (NJTTF) Terrorism Threat Intelligence Center (TTIC). These liaisons support their host organizations by providing public health and medical input to non-health-focused operations centers. The liaisons transmit any critical public health and medical requirements to the SCC, which are then brought to the ASPHEP for dissemination within HHS and ESF #8 partner organizations.

[6] For example, during an emergency, the SCC can provide Health Asset Resource Tracking with geospatial information system capability.

HHS manages the ESF #8 field response through the SERT. The ASPHEP establishes and deploys the SERT to coordinate the activities of all HHS personnel sent to a disaster area to assist State, Tribal, jurisdictional, and other Federal agencies (Exhibit 7-2). During incident response, all communications to the SCC are directed through the SERT to further promote coordination within the response system.

Exhibit 7-2. Key Roles of the Secretary's Emergency Response Team (SERT)

The SERT focuses on supporting the public health and medical management of the incident. The SERT is not a direct field response unit designed to provide medical or mental health care, decontamination, or other direct response services. As management support to the health incident managers, the SERT will have the personnel and equipment to fulfill the following primary functions:

- Manage the personnel and activities of the SERT.
- Coordinate closely with HHS regional personnel and other Federal assets (e.g., Principal Federal Official).
- Integrate with the jurisdictional incident managers and provide support to incident management as indicated and per the receptiveness of Tribal, State, jurisdictional, and other Federal agency incident managers. This includes providing a "trouble desk" function for the State, Tribe, and jurisdiction incident managers to contact if they have questions or concerns regarding their interface with HHS.
- Provide the Federal field management/coordination for deployed HHS response assets. The SERT coordinates information and activities across all HHS public health and medical assistance, whether providing subject matter experts (SMEs) or larger Federal health assets, including reach-back labs.
- Serve as a major data and information processing function for HHS activities as required.
- Develop a situation assessment, usually done in conjunction with the jurisdictional IMS, that may prompt recommendations to the incident managers concerning HHS assets that could be of assistance.
- Act as the conduit for incident information exchange between the SCC and the field (via the SERT Leader).

The SERT is composed of managers, technical experts, and liaisons from HHS headquarters and from regional HHS offices. Unless directed otherwise by the ASPHEP, a Regional Health Administrator (RHA) is deployed and becomes the SERT Leader. The SERT Leader serves as the Secretary's agent on scene at emergency and disaster sites and coordinates regional ESF #8 response activities. At the direction of the SERT Leader, liaisons are deployed to field operations centers (e.g., Joint Field Office,[7] State EOC) to represent the SERT Leader and the Federal public health and medical response community. In addition to the RHA, the Regional Director (RD) automatically becomes a member of any SERT deployed to their region.

- ***Regional Health Administrator (RHA):*** Oversees HHS public health programs at the regional level and coordinates with State and local health officials. The RHA is responsible for building working relationships with State and local public health officials as well as other Federal departments within their region.
- ***Regional Director (RD):*** Serves as the Secretary's regional representative and is the primary spokesperson for HHS in its regional offices, except when a SERT is deployed in the area. During non-response, the RD reports pertinent information on regional issues and implications to the Director of the Office of Intergovernmental Affairs, who reports directly to the Secretary and the Deputy Secretary. The RD develops close working relationships with key State, Tribal, and local elected officials to communicate HHS initiatives and policies.

7.4 Implementation of ESF #8

ESF #8 resources are requested and coordinated by HHS in support of an affected State, Tribe, or jurisdiction during response to a variety of hazards and events with implications for public health and medical emergencies. Such emergencies or events include:

- Natural and manmade disasters and public health and medical emergencies;
- Terrorist threats or incidents using chemical, biological, nuclear/radiological, or large explosive devices;
- Infectious disease outbreaks and pandemics;

[7]The Joint Field Office was formerly known as the Regional Operations Center, or ROC.

- Animal health emergencies, such as those in support of ESF #11 (e.g., Bovine Spongiform Encephalopathy, Hoof and Mouth Disease); or
- Any other circumstance that creates an actual or potential public health or medical emergency where Federal assistance may be necessary.

Information about threats to the public's health come to the attention of HHS through a variety of sources: public health and emergency management authorities at all levels of government; disease surveillance systems; law enforcement agencies; intelligence channels; agricultural, industrial, and environmental agencies; and media sources.

For ESF #8 to maintain situational awareness, the SCC is the notification point within ESF #8 for all public health and medical threats and emergencies. Any information regarding a threat or a public health and medical emergency received by an ESF #8 support organization must be transmitted immediately to the SCC. Following a notification, the SCC follows internal policies and procedures to notify the appropriate officials (e.g., ASPHEP). The ASPHEP directs the SCC regarding further notifications to DHS and ESF #8 support organizations depending on the nature of the threat.

Upon notification, HHS convenes an ESF #8 partners conference call to assess the situation and determine the appropriate actions. The ASPHEP alerts pre-designated HHS personnel to represent ESF #8 on the following:

- National Resource Coordination Center (NRCC);
- Regional Resource Coordination Center (RRCC)/Joint Field Office (JFO);
- Emergency Response Team–National (ERT-N)
- Emergency Response Team–Advance Element (ERT-A); and
- Joint Information Center (JIC).

The national ESF #8 group at HHS headquarters brings ESF #8 to an operational status on notification of the occurrence or threat of a public health or medical disaster or emergency. HHS consults with the appropriate ESF #8 support organizations to determine the need for assistance according to the functional areas that follow.

(1) Assessment of Public Health/Medical Needs. HHS, in collaboration with DHS, mobilizes and deploys ESF #8 personnel to support the ERT-A to assess public health and medical needs. This function includes the assessment of the public health care system/facility infrastructure.

(2) Health Surveillance. HHS coordinates with State, Tribal, and jurisdictional officials to:

(a) Establish surveillance systems to monitor the health of the general population and special high-risk populations;

(b) Conduct field studies and investigations;

(c) Monitor injury and disease patterns and potential disease outbreaks; and

(d) Provide technical assistance and consultations on disease and injury prevention and precautions.

(3) Medical Care Personnel:

(a) Immediate medical response capabilities are provided by assets internal to HHS (e.g., U.S. Public Health Service Commissioned Corps) and from ESF #8 supporting organizations (e.g., NDMS).

(b) Department of Defense (DOD) may be requested to provide support in casualty clearing/staging and other missions as needed.

(c) HHS may seek individual clinical health and medical care specialists from the Department of Veterans Affairs (VA) to assist State, Tribal, and local personnel.

(4) Health/Medical Equipment and Supplies. HHS may request agencies to provide medical equipment and supplies, including pharmaceuticals, and biologic products (e.g., SNS) in support of immediate medical response operations and for restocking healthcare facilities in an area.

(5) Patient Evacuation:

(a) HHS may request ESF #1 to provide support to DOD for patient movement in the evacuation of seriously ill or injured patients from the affected area to locations where hospital care or outpatient services are available.

(b) DOD will be responsible for regulating and tracking these patients to appropriate treatment facilities (e.g., NDMS non-Federal hospitals, VA hospitals, and DOD military treatment facilities).

(6) Patient Care. HHS may task its OPDIVs, and the Medical Reserve Corps, and request the VA, DOD, and DHS to provide available personnel for support in hospital care and outpatient services to victims who become seriously ill or injured.

(7) Safety and Security of Human Drugs, Biologics, Medical Devices, and Veterinary Drugs, etc. HHS may task its OPDIVs to ensure the safety, efficacy, and security of regulated foods, human and veterinary drugs, biologics (including blood and vaccines), medical devices (including radiation emitting and screening devices), and other HHS regulated products.

(8) Food Safety and Security. HHS, in cooperation with ESF #11, may task its OPDIVs to ensure the safety and security of Federally regulated foods.

(9) Blood and Blood Products. HHS will establish and maintain contact with the American Association of Blood Banks Inter-organizational Task Force on Domestic Disasters and Acts of Terrorism and, as necessary, its individual members, to determine:[8]

(a) The need for blood, blood products, and the supplies used in their manufacture, testing, and storage;

(b) The ability of existing supply chain resources to meet these needs; and

(c) Any emergency measures needed to augment or replenish existing supplies.

(10) Agriculture Safety and Security. HHS, in coordination with ESF #11, may task its OPDIVs to ensure the safety and security of animal feed and therapeutics.

[8]Members of the Task Force include: AdvaMed, American Association of Blood Banks, American Association of Tissue Banks, American Hospital Association, American Red Cross, America's Blood Centers, Armed Services Blood Program Office, Blood Centers of America/ hemerica, Centers for Disease Control and Prevention, College of American Pathologists, Department of Health and Human Services, Food and Drug Administration, and the Plasma Protein Therapeutics Association.

(11) Worker Health/Safety:

(a) HHS will request Department of Labor (DOL) assistance to coordinate responder and worker safety and health using processes detailed in the Worker Safety and Health Support Annex.

(b) HHS may task its OPDIVs and request support from DOL and other cooperating agencies, as needed, to assist in monitoring health and well-being of emergency workers; performing field investigations and studies addressing worker health and safety issues; and providing technical assistance and consultation on worker health and safety measures and precautions.

(12) All-Hazard Consultation, Technical Assistance, and Support. HHS may task its OPDIVs to assist in assessing public health and medical effects resulting from all hazards. Such tasks may include:

(a) Assessing exposures on the general population and on high-risk population groups;

(b) Conducting field investigations, including collection and analysis of relevant samples;

(c) Providing advice on protective actions related to direct human and animal exposures, and on indirect exposure through contaminated food, drugs, water supply, and other media; and

(d) Providing technical assistance and consultation on medical treatment and decontamination of injured/contaminated individuals.

(13) Mental Health Care. HHS may task its OPDIVs to assist in:

(a) Assessing mental health and substance abuse needs;

(b) Providing disaster mental health training materials for disaster workers;

(c) Providing liaison with assessment, training, and program development activities undertaken by Federal, State, Tribal, and jurisdictional mental health and substance abuse officials; and

(d) Providing additional consultation, as needed.

(14) Public Health and Medical Information. HHS may task its OPDIVs to provide public health, disease, and injury prevention information that can be transmitted to members of the general public.

(15) Vector Control. HHS may task its OPDIVs to assist in:

(a) Assessing the threat of vector-borne diseases;

(b) Conducting field investigations, including the collection and laboratory analysis of relevant samples;

(c) Providing vector control equipment and supplies;

(d) Providing technical assistance and consultation on protective actions regarding vector-borne diseases; and

(e) Providing technical assistance and consultation on medical treatment of victims of vector-borne diseases.

(16) Potable Water/Wastewater and Solid Waste Disposal. HHS may task its OPDIVs and request assistance from other ESF #8 partners, as appropriate, to assist in:

(a) Assessing potable water, wastewater, solid waste disposal issues, and other environmental health issues;

(b) Conducting field investigations, including collection and laboratory analysis of relevant samples;

(c) Providing water purification and wastewater/solid waste disposal equipment and supplies; and

(d) Providing technical assistance and consultation on potable water and wastewater/solid waste disposal issues.

(17) Victim Identification/Mortuary Services. HHS may request DHS and DOD to assist in:

(a) Providing victim identification and mortuary services;

(b) Establishing temporary morgue facilities;

(c) Performing victim identification by fingerprint, forensic dental, and/or forensic pathology/anthropology methods; and

(d) Processing, preparation, and disposition of remains.

(18) Veterinary Services. HHS, in coordination with ESF #11, may task its OPDIVs and request DHS to assist in delivering healthcare to injured or abandoned animals and performing veterinary preventive medicine activities, including conducting field investigations and providing technical assistance and consultation as required.

7.5 Integration With Other Tiers

Requests for Federal support should specify the *need for assistance*, rather than ask for specific Federal assets. Thus, a key component of preparedness planning for emergency managers is determining the precise capabilities of the State, Tribal and jurisdictional response systems, and establishing the process for recognizing when Federal health and medical assistance may be indicated. Some basic considerations for preparedness planning follow:

- What are the full public health and medical response capabilities for the State or Tribe (including such resources as community clinics, Tribal Hospitals, VA Hospitals, and intrastate/interstate mutual aid arrangements)?
- What types of event-generated demands can the response system handle? What demands may exceed the State or Tribe's resources (e.g., victims requiring isolation, casualties from an uncontrolled radiation release)?
- What criteria will be used to determine when the State or Tribal response system is severely challenged (i.e., when the need for Federal support arises)? How will the decision-making process occur, especially early in an event?
- What information or data will be necessary to define the specific requests for Federal assistance? How will this information be collected, collated, and analyzed at the State or Tribal level under the stress and time constraints of a large-scale or very unusual incident? Identifying the types of information that are important to convey when making a request for Federal assistance is an important step of preparedness planning for State, Tribal and jurisdictional emergency managers.

The defined need for assistance is transmitted from the State EOC to the DHS/Federal Emergency Management Agency (FEMA) Joint Field Office (JFO). A JFO is established when it is determined that interagency operations will be necessary to support the needs of the State during the emergency. The staff at the JFO converts the request into a Mission Assignment Request that is submitted to the leader of the appropriate ESF. For example, ESF #1 would be activated for assistance with transportation, while ESF #6 would be activated for assistance with sheltering of large numbers of people. It is then the responsibility of the ESF leader to coordinate the mission assignment tasks with the Federal agencies that are partners in that ESF.

In the event that public health and medical assistance is activated under ESF #8, Federal resources will be tactically integrated into the appropriate State, Tribal, or jurisdictional IMS. This is essential, since Federal assets are meant to *support* State and jurisdictional response efforts—not supplant them. To facilitate integration, Federal response teams should be briefed on how an emergency response is being managed at the State, Tribal, or jurisdictional level (e.g., where primary incident management is occurring, who the lead management authority is).

On behalf of ESF #8, the SERT will receive *tactical* direction (e.g., instruction on where to report, what activities to perform) from the appropriate State, Tribal, or jurisdictional authorities. Before Federal assets arrive on scene, it is critical to establish a primary point-of-contact or liaison for Federal response teams. Additional issues to address in preparedness planning include:

- Where will Federal support be staged and operate once it is committed to the State, Tribal, or jurisdictional incident response?[9]
- What processes are in place to integrate external assets into State, Tribal, or jurisdictional incident management?
- If the SNS is activated, where will these assets arrive?
  - Is there a plan in place to break the SNS down once it arrives?
  - Has a dispensing priority system been established for receipt of SNS assets? Will elected officials, first responders, or the general public be given priority? What about family members of first responders, the elderly, or other at-risk populations?
  - How will the SNS be distributed? If distribution centers have been established, how will the assets get there?
  - How will personnel responsible for distributing SNS get to the distribution centers? Have alternative plans been established?

Although Federal teams will coordinate with State, Tribal, and jurisdictional management on tactical issues, overall strategic direction comes from the ASPHEP through the SERT Leader. The processes to be used for formal reporting and decision-making between Federal agencies and State or Tribal Governments should be established *at the outset* of the response and disseminated throughout the system. This will clarify operational control and chain-of-command issues.

[9]Federal assets deployed in anticipation of need are commonly "staged" on Federal property, such as military bases, prior to being assigned to State, Tribal, or jurisdictional management.

7.6 Illustrative Example

The following example demonstrates how the concepts presented in this chapter may be applied during an actual incident response. The various phases of response (as described in Chapter 1) highlight when critical actions should occur; however, the example extends only as far as incident response, as this is the focus of the MSCC Management System.

Background and Incident Description

- A large, 7.0-magnitude earthquake occurs, with the epicenter near a metropolitan area on the New Madrid Fault in the central United States.
- The earthquake occurs at dusk. Widespread loss of electrical power in the affected area limits the effectiveness of aerial flyovers for initial assessment. Early reports indicate that multiple cities and towns across the region are severely affected, with hundreds of structures reported to be collapsed, partially collapsed, or unusable.
- Initial reports indicate that hundreds of people may be dead.

Given the severity of the event, the early response stages unfold fairly rapidly as follows:

- **Incident recognition** at the Federal level occurs almost immediately, as the RHA in the affected area rapidly contacts the SCC to report that a major earthquake has occurred. The SCC will also be notified of the event from the DHS HSOC. At the same time, staff in the SCC receives initial media reports from national news agencies describing the incident. It becomes immediately obvious that Federal assistance will be indicated.
  - The SCC immediately notifies the ASPHEP, who alerts the Secretary of HHS. The ASPHEP also notifies and briefs senior managers at HHS headquarters and at the OPDIVs.
- **Notification/activation** of Federal public health and medical assistance occurs, sometimes in anticipation of the Governor's request for a Presidential disaster declaration and implementation of the Stafford Act. The request is reviewed by appropriate officials and a Presidential disaster declaration is issued. As the request proceeds through the system, the RHA establishes contact with the health and medical officials, and the RD establishes contact with

elected officials, of the affected States, Tribes, and jurisdictions. This initiates the process for potential Federal assistance once a declaration is made and specific missions have been authorized.

  - HHS alerts the SERT personnel, and notifies its OPDIVs and appropriate ESF #8 support agencies.

- **Mobilization** at the national level is marked by an increase in staffing at the SCC, and by deployment of HHS liaisons to staff the NEOC and IIMG. In addition, the ASPHEP establishes and deploys the SERT to the disaster area. As the presumptive SERT Leader, the RHA will begin the initial assessment of public health and medical needs and relays this information to the SCC.
  - RHA and regional ESF #8 staff will coordinate with DHS through the Principal Federal Official and the JFO, once it is established.
  - OPDIVs mobilize their EOCs, enhance staffing, and provide liaisons to the SCC to coordinate response activities across the Department.

Response actions are closely coordinated among jurisdictional, State, Tribal, and Federal officials. Once on scene, the SERT leader coordinates all Federal health and medical resources that have been deployed. The SERT Leader interacts with the State public health official(s) and emergency managers at the State EOC and relays information back to the SCC for accurate real-time situational awareness. The State EOC has activated its preplanned procedure for centralizing requests for public health and medical assistance from jurisdictional and State authorities and determines if requests can be met using State resources or assets immediately available through mutual aid arrangements with neighboring States.

Once it is determined that Federal assistance for resources or assets is indicated, the State submits the request to the DHS request process through the JFO. Once the JFO has the request, DHS/FEMA distributes a mission assignment requirement to the appropriate ESF. For public health and medical requests, ESF #8 is tasked. As the lead Federal agency for ESF#8, HHS has the responsibility to fulfill the mission assignment request in coordination with the Federal partners that support ESF #8.

The SERT Leader provides situation reports to the SCC on a regular schedule and all HHS response actions at the scene are coordinated with the SCC and other Federal operation centers (e.g., HSOC, NEOC, etc.). Based on information contained in these situation reports, the ASPHEP, on behalf of the Secretary, coordinates various ESF #8 functions:

- Coordinates the deployment of immediate medical care (e.g., NDMS and U.S. Public Health Service Commissioned Corps) to help provide required health services in heavily affected communities;
- Coordinates patient movement with DOD and the VA;
- Deploys healthcare personnel from the U.S. Public Health Service Commissioned Corps to support hospitals that are short-staffed;
- Deploys experts from HRSA to assist in evaluating affected hospitals and other HCFs;
- Deploys experts from FDA to provide consultation regarding safe feeding of displaced populations;
- Tasks CDC to provide technical assistance on injury prevention;
- Tasks CDC and FDA to assist in monitoring the health of emergency workers, and to provide technical assistance on worker health and safety measures and precautions;
- Tasks SAMHSA to assist in providing mental health crisis counseling; and
- Tasks IHS and other relevant Federal agencies to assess potable water and waste water/solid waste disposal issues resulting from loss of power and water utilities.

The HHS Assistant Secretary of Public Affairs collaborates with the DHS Public Affairs Office on all public affairs aspects of the response. Public affairs response teams are deployed to address media inquiries, to develop public information materials, and to provide public information liaison officers to the SERT and to other Federal operations centers. The primary Joint Information Center (JIC), established in support of the NRP, provides general health and medical information to the public after consultation with HHS.

NOTES

Chapter 8: Implementation, Training, and System Evaluation

Contents

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Key Points of the Chapter

The concepts presented in the MSCC Management System are designed to complement ongoing initiatives to establish individual components of medical surge, such as identifying pools of qualified healthcare personnel. This handbook provides the management processes necessary to enhance coordination and integration of these components. Implementation of these concepts should take full advantage of the assets and processes already in place to address medical surge. Important areas of focus for implementation strategies include:

- **Management of Individual Healthcare Assets (Tier 1).** Develop processes in the healthcare facility (HCF) Emergency Operations Plan (EOP) that promote effective internal management of the HCF response and information management. This will significantly enhance the ability of HCFs to coordinate with one another and to integrate into the larger community response.
- **Management of the Healthcare Coalition (Tier 2).** Establish processes for cooperative planning and information sharing among HCFs that can be used in times of crisis, as well as during day-to-day operations. To the extent possible, standardize requirements so that HCFs know what to report, when to report, in what format, and to whom. Establish or revise mutual aid agreements that formally describe processes for requesting, receiving, and managing mutual aid support.
- **Jurisdiction Incident Management (Tier 3).** Bring together representatives of the various emergency response entities, including acute-care medicine and public health, to participate in joint planning. Determine how event notification, unified incident management, and information management will occur across the response system. Ensure that processes are in place so health and medical input can be provided into unified incident management.
- **Management of the State Response (Tier 4).** Determine critical information requirements for coordinating intrastate jurisdictions and specify how State primary incident management will occur when necessary. Conduct an inventory and assessment of existing mutual aid agreements and determine how they can be enhanced to specifically address public health and medical issues.

- **Interstate Regional Management Coordination (Tier 5).** Establish interstate mutual aid arrangements that address medical and health needs. Determine critical information requirements and how information will be shared across State borders. Identify points of contact in neighboring States and formally establish processes for requesting, receiving, and managing support.
- **Federal Support to State and Jurisdiction Management (Tier 6).** Establish processes to gather Statewide information, to evaluate response capabilities, and to demonstrate the need for Federal health and medical assistance. Understand how Federal health and medical resources are organized, how they are activated and where they come from, and establish processes to facilitate integration of Federal assets at the State and local levels.

Once the concepts of the MSCC Management System are implemented, responder training should examine how they are applied within tiers and across tiers to shape the overall response system. Training sessions should include representatives from each of the major organizations involved in mass casualty or complex incident response. The training may be structured in stages of varying complexity and difficulty so that participants of similar knowledge level and experience can learn together. Both didactic instruction and exercises might be used to maximize comprehension and retention of key concepts. Trainers should have significant experience and demonstrated expertise in large-scale incident response, and they should be able to motivate people from diverse professions to work together.

The lack of system change after thorough incident review has been a major challenge for all response entities from the local to the Federal levels. To truly be effective, the response system must continually evolve to incorporate best-demonstrated practices identified through exercises or incident reviews. A mechanism should be built into the system to provide feedback on ways to address deficiencies. In all after-action analyses, input from medical and public health disciplines should be sought and incorporated with the recommendations of other disciplines.

8.1 Implementation Strategies

The concepts described in the MSCC Management System present an overall strategy for defining cohesive management and operational relationships for the diverse and often disparate entities that collaborate to provide MSCC. The MSCC Management System does not require an all-or-nothing approach; it may be partially implemented or fully implemented, but in a stepwise fashion over time. It is meant to complement ongoing initiatives that establish individual components of MSCC, such as identifying pools of qualified personnel, pharmaceutical and equipment caches, plans for medication-dispensing stations, and enhancements to laboratory capabilities. In addition, the MSCC Management System can serve as a comparison tool when assessing and revising current programs and plans, as a tool for planning and evaluating exercises, or even for conducting incident after-action reviews.

The concepts described in this handbook should be incorporated with existing assets and processes to limit the amount of new infrastructure that must be developed. Therefore, implementation efforts should focus first on evaluating established Emergency Management Programs (EMPs) and Emergency Operations Plans (EOPs) within individual tiers. If systems already in place meet the objectives of the MSCC Management System but operate differently than presented here, they most likely do not require change. If deficits are detected, this document could suggest where revisions to the system (rather than replacement) might enable the system to integrate more effectively into the overall response.

8.1.1 Management of Individual Healthcare Assets (Tier 1)

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and other accrediting agencies require all HCFs to have individual EOPs. As stated in Chapter 2, excellent models already exist that describe how HCFs can organize *internally* to respond to extreme events. Tier 1 focuses on the internal HCF process that enhances *external* integration with other HCFs (Tier 2) and with non-medical assets (Tier 3). Persons reviewing existing HCF EOPs or developing new ones should consider the following major issues in applying MSCC concepts to their facility:

- ***Management of the HCF response:*** Review the qualifications and training of personnel expected to lead HCF efforts during a major response. These personnel must understand the full range of internal resources available during response and how to organize and manage the HCF effort to maximize integration with external assets. In addition, the HCF EOP should outline the steps necessary to institute a proactive management model, driven by action planning, during the early stages of response. This promotes internal HCF organization and information exchange with other entities.
- ***Information management:*** Establish quick, reliable, and redundant methods for sharing incident information. This will help link HCFs with other acute-care medical assets (Tier 2) and with the larger jurisdiction response (Tier 3). It is important not only to establish the modes of communication that will be used, but also to identify the *type* of information required for a coordinated response. Examinations of HCF procedures for obtaining and conveying incident information should be reviewed to determine:
  - What internal linkages are necessary to ensure that initial survey data and ongoing incident information can be rapidly provided to internal HCF operations? Establishing a method for situation reports, including resource assessments, within different components of the HCF is invaluable for incident management.
  - What mechanisms can be instituted to track patients internally during incidents of sudden surge, so that it can be quickly determined which patients are, or are definitely *not*, receiving care at the facility?
  - What external linkages need to be made to facilitate information exchange with other medical assets, both in terms of providing data and soliciting information during a crisis?
  - What types of information are appropriate to share externally during response and, therefore, can be formatted into an HCF action plan?

To the maximum extent possible, these efforts should be standardized across jurisdictional HCFs through Tier 2 mechanisms. Smaller entities that provide hands-on care in the community (e.g., neighborhood clinics, private physician offices) should not be neglected in preparedness efforts. Presenting methods for participation (as described in Chapter 2) to individual practitioners and smaller clinics may greatly enhance their participation in major response efforts.

8.1.2 Management of the Healthcare Coalition (Tier 2)

HCFs are increasingly engaging in joint-planning efforts, particularly as they participate in bioterrorism preparedness initiatives funded by the Health Resources and Services Administration (HRSA). Moreover, many localities already have established operational interaction between HCFs to monitor emergency department and critical care capacity, ambulance diversion, and other everyday situations. These activities provide an ideal opportunity for HCFs to come together to discuss and plan for coordinating major medical response.

Key issues to consider when implementing Tier 2 concepts include:

- Is there an organizational structure in place that allows HCFs to collaborate in a non-competitive environment? This organizational structure may be a local hospital association, local medical society, or local/regional EMS council.
- Are mechanisms available that allow HCF managers to interact with one another in time of need, as well as during day-to-day operations? Current processes and systems should be reviewed for their ability to support this interaction. Hospital communication centers established for private patient transport, or as EMS command centers for a jurisdiction, may be expanded or adapted to fulfill this requirement.
- Have communication and information management processes been standardized among Tier 2 coalition members, including formats for recording data? Consideration should be given not only to technology needs, but also to the methods that will be used to facilitate consensus decision-making.

- Do existing tactical mutual aid arrangements among HCFs clearly establish the processes for requesting, receiving, and managing mutual aid support? An initial assessment may be needed to inventory and evaluate support mechanisms that already exist, and to determine how to prioritize new efforts to maximize MSCC. Consideration of such issues as staff credentialing, liability coverage, worker compensation, and reimbursement mechanisms is critical.

8.1.3 Jurisdiction Incident Management (Tier 3)

Implementation of MSCC concepts at the jurisdictional level should follow a process in which representatives of various response disciplines (including acute-care medicine) assemble to examine how to improve the delivery of medical care during extreme events. The process should examine specific questions, such as:

- How will the various response entities notify one another of an impending or occurring event?
- What critical information should be included in the initial notification messages?
- How will response entities establish jurisdictional incident management for the wide range of events that may potentially result in human casualties?
- How will response entities organize and interact with one another during a response, and how will the input of individual agencies be given to the lead management agency?
- How will representatives of the medical community (traditionally private sector) provide input into the unified incident management process (e.g., through a designated position in a unified incident management team (UIMT), a senior advisory role, or some other mechanism)?
- What critical information should be shared among response entities? How will needs be addressed, while including such private-sector entities as hospitals and clinician offices?

- What type of support from the jurisdiction's non-medical entities may be needed to enhance the ability of health and medical assets to provide MSCC?
- What critical demobilization issues are there for HCFs?
- How can representatives of the healthcare community be incorporated into after-action reviews?

Initiatives undertaken to address these questions should use currently available assets and processes to enhance operational relationships. For example, most jurisdictions have 911 emergency communication centers (ECCs) for everyday emergency services. The ECC may be adapted to perform the notification and early planning/information function for the jurisdiction's (Tier 3) EOP until this can be established at the Incident Management Post. In addition, the ECC and its paging/messaging services can provide initial notification to on-call representatives of the UIMT and be used for the early teleconference that initiates unified incident planning.

Examinations of the jurisdictional (Tier 3) response system should focus on identifying processes that promote unified incident management. Exhibit 8-1 outlines a series of basic steps that can be followed to incorporate unified management processes into the jurisdictional EOP. In addition, each response entity should be assessed for its ability to integrate into the system. Assets that do not reach a threshold of desired management capability (e.g., effective incident information processing, incident planning, and informed decision-making) should be prioritized for improvement through jurisdiction EMP actions.

Exhibit 8-1. Unified Management Process in the Tier 3 EOP

The following is a general guide for establishing unified incident management techniques in the jurisdiction's EOP.

1. Review the jurisdiction's hazard and vulnerability analysis (HVA) to identify key management needs for all identified hazards.
2. Identify agencies that repeatedly are included in the list of key management needs and designate these agencies as standard participants in unified incident management (UIM).
3. Identify other organizations that might be called on for management input during specific incidents (e.g., public school system for a foodborne outbreak in a school cafeteria). A decision support tool should be established to determine which agencies should be included as UIM participants for specific events.
4. Identify the lead agency for each type of hazard (recognizing that the lead may shift by response stage and by incident issue).
5. Define how the UIM team (UIMT) will come together during response, whether physically or via remote teleconference.
6. Define how transition of lead authority in the UIMT will occur as indicated during a response.
7. Define the incident planning capability for the UIMT (who will plan and how). This position is the Planning Chief and conducts management and planning meetings, operations briefings, and situation updates.
8. Define the site where incident management will occur, if it is not defined by a hazard scene.
9. Define how the site and capability for UIM will be established if the incident management post is scene-defined. For example, if the designated lead agency in the UIMT has a command vehicle, this may become the command post during field response.
10. Define the process for action planning in the UIMT. What critical information will be required from both public and private sectors, and what time frames (operational periods) could potentially be used?
11. Define how information management functions will be integrated between the various response entities in a jurisdiction.
12. Define the demobilization requirements for UIM, including whether agencies can decrease their participation in UIM as objectives are met (and, if so, how this will be accomplished).
13. Define after-action methodology, participants, and responsibilities.

8.1.4 Management of State Response and Coordination of Intrastate Jurisdictions (Tier 4)

A starting point for implementing State-level MSCC is to establish the management processes that would occur if the State were to assume primary incident management responsibility. Preparedness activities should examine how State public health and medical assets would be incorporated into UIM, and how State managers would interact with jurisdictional (Tier 3) response entities.

The State must examine critical information requirements to coordinate intrastate jurisdictions:

- What type of information and/or data will be important for the State to obtain from jurisdictional incident management (Tier 3)?
- How will this information/data be obtained from jurisdictions, and how will it be collated and analyzed at the State level?
- Have standardized formats for reporting incident information/data (including status and resource updates) been developed and provided to jurisdictional management?
- Are procedures in place, and does the infrastructure capability exist, to facilitate rapid dissemination of aggregate information/data back to local jurisdictions?

Other important implementation tasks include conducting an inventory and assessment of existing tactical mutual aid arrangements. These plans should be reviewed to determine possible ways to address the medical (e.g., licensure, liability) and financial (e.g., lack of guaranteed reimbursement) barriers for private HCFs that provide mutual aid services. State-level incident management systems that do not incorporate the private medical sector should consider adopting a healthcare coalition (Tier 2) function to address the concerns of HCFs. Recognizing medical and health assets (Tier 1) as crucial players in public safety emergency response may promote their participation in an incident management system. It may also promote an understanding by State officials of the specific requirements of medical and health assets.

8.1.5 Interstate Regional Management Coordination (Tier 5)

Activities to improve interstate regional management coordination should focus on expanding current initiatives to better address MSCC in the private health and medical sector. Processes should specify key information requirements, explain how data will be shared between States, and identify key points of contact at the State level and their counterparts in neighboring States. The organization of State incident management (Tier 4) should be shared between partner States to enhance coordination of management activities, such as the exchange of incident action plans and support plans.

Examinations of strategic, or "master," mutual aid guidelines should ensure that key "top-line" issues for medical and health entities have been addressed. Important issues include licensing, liability coverage, and worker's compensation for out-of-State healthcare personnel, as well as reimbursement mechanisms for medical and health assets. Tactical mutual aid agreements may provide the specific methods for requesting, receiving, and managing interstate mutual aid, transporting and distributing assets, and demobilizing health and medical resources. Preparedness activities should examine Emergency Management Assistance Compact (EMAC) legislation and regulations to ensure that health and medical requirements for MSCC are adequately addressed.

8.1.6 Federal Support to State and Jurisdiction Management (Tier 6)

Because of significant changes in the Federal response system following September 11, State emergency planners should review and understand the Federal response capability, how Federal health and medical assistance may be obtained, and under what authority it may be activated. The State and jurisdictional EMP should determine what their own response capabilities are (i.e., what can the system handle, and what can it definitely *not* handle), and identify what types of information will be critical in demonstrating the need for Federal assistance. Before an emergency or disaster occurs, State and local response systems must identify the criteria they will use to determine that their system has reached capacity and that additional support, through mutual aid or Federal assistance, is necessary.

States and local jurisdictions should also have operational plans (within their EOP) describing how Federal resources (personnel, supplies, equipment, or facilities) will be integrated into the State and local response effort. Among other issues, it is important to consider:

- Where will Federal health and medical assets be staged upon arrival?
- To whom will Federal personnel report for tactical direction?
- How will State emergency management (at the State EOC) accommodate and interact with the Secretary's Emergency Response Team (SERT, see Chapter 7) and other deployed liaisons?
- What management processes will direct the distribution of Federal resources, such as Strategic National Stockpile (SNS) medications, vaccines, and supplies?
- Are guidelines in place specifying who has priority access to limited vaccines, personnel, or supplies, and how this will be communicated to the general public?
- Have plans for demobilization addressed the demobilization of Federal health and medical assets?

8.2 Training Strategies

Training that incorporates the MSCC Management System could follow the same strategies presented under implementation. A course that orients participants to the overall system and its functions is important in establishing the key concepts for preparedness planners and incident response managers (a draft curriculum is presented for consideration at the end of this chapter, Exhibit 8-2).[1] A shorter version of the course must be available to brief healthcare executives. Other training activities could be assessed and revised so that they convey the appropriate knowledge and teach the skills necessary to operate the indicated MSCC integration actions.

Training sessions ideally include representatives from all of the major organizations involved in mass casualty or complex incident response, including:

[1]Training course design and specific curriculum may vary based on the audience.

- Hospital personnel;
- Healthcare coalition (Tier 2) representatives;
- Public health officials;
- EMS personnel;
- Fire service personnel;
- Law enforcement officers;
- Emergency management personnel;
- State-level emergency managers; and
- Other organizations that may be involved in major incident response (e.g., American Red Cross, Salvation Army, local pharmacy association).

To maximize the value of training, participants should have relatively comparable levels of knowledge and experience with regard to the management component of emergency preparedness and response. This may be achieved by providing training in stages that present progressively more advanced concepts. For example, the beginner level might focus on important medical and health issues in EMP and EOP development, such as incident action planning and unified incident management. More advanced training might address the interaction of medical and health assets with other response agencies at the jurisdictional, State, and Federal levels. Even at the beginner level, however, it is critical that participants understand the basic applications of emergency management and the Incident Management System (IMS, see Appendix B).

Individuals providing training should be senior-level personnel with significant experience and demonstrated expertise in large-scale incident response. Beyond demonstrating a subject matter expertise, trainers should be effective instructors with exceptional communication skills. They should possess the skills needed to:

- Effectively communicate complex topics in easy-to-understand language;
- Help trainees work through real-life scenarios while integrating many diverse perspectives into decision-making processes and incident planning; and

- Motivate trainees from different professional disciplines to work together in support of improving overall strategy for medical surge.

To complement didactic instruction, exercises may be used to *evaluate* systems, processes, and skills.[2] The evaluation objectives are established as the first step in exercise planning, so the incident scenario and other parameters may be designed to meet these objectives. Exercises that are intended to evaluate the functional effectiveness of the MSCC Management System should have objectives that focus on coordination between tiers and integration of individual assets within the tiers.

Incorporating concepts from the MSCC Management System into existing response plans promotes ongoing training through their use during response to small or low-intensity events. This is important in familiarizing incident managers and response personnel with the system and facilitates coordination and integration under more severe incident stress. Frequent practice will also help emergency planners identify how plans can be revised to enhance interfacility coordination and multidisciplinary integration.

8.3 Ongoing System Evaluation

An effective response system is one that continually evolves to incorporate best-demonstrated practices identified in analyses of training exercises or actual events. Therefore, the response system should have a built-in mechanism that provides feedback on the strengths and weaknesses of preparedness and response initiatives, and that identifies strategies to improve the overall system. One primary vehicle for this feedback is a thorough and timely after-action review of response efforts. The review must look at medical and public health components of incident response and, therefore, must have clearly defined participatory roles for acute-care medical and public health responders. Moreover, there should be processes attached to the after-action review to help implement real change in the system based on review findings.

[2]The Department of Homeland Security's Homeland Security Exercise and Evaluation Program (HSEEP) helps State and local jurisdiction governments develop, implement, and evaluate exercise programs to enhance preparedness. Additional information on HSEEP is available at http://www.ojp.usdoj.gov/odp/docs/hseep.htm.

Exhibit 8-2. MSCC Management System Training Course – Draft Curriculum

Training Course Strategy Considerations:

- 2-day course
- Participant selection based on participant's designation in critical incident management positions (not necessarily everyday management positions).
- Consider "FEMA Emergency Management Institute style" training format, which emphasizes multidisciplinary participation by key community response managers/personnel, including:
  - Political authority
  - Emergency manager
  - State public health
  - Fire service
  - Law enforcement
  - Emergency Medical Services (EMS)
  - Hospital executives
  - Hospital operational managers
  - Medical practitioner representatives (actual/practicing medical practitioners, not association personnel)
  - Public works
  - Representatives of any Federal health asset (DOD, VA, IHS, HRSA) situated in the community
  - Emergency communications
  - State EMA representatives, if available

Course Prerequisites:

- Prior incident management (response) experience
- Completed basic ICS/IMS coursework or other education on ICS/IMS, such as the National Incident Management System (NIMS).
- Thorough understanding of the Federal health and medical response (NRP, NIMS).

Exhibit 8-2. MSCC Management System Training Course – Draft Curriculum (cont.)

Outline of Day 1

1. Introduction to course and delineation of training objectives
2. Initial tabletop: work through scenario defining issues, complexities of health and medical response. Focus on event recognition, initial information, and notification/activation in a fast-paced, multidisciplinary response (to spotlight the complexity and management urgencies of the initial phases)
3. Presentation: Introduction material and overview of the tiers
4. Lunch
5. Presentation: Tiers 1-3: system description and discussion of illustrative examples to spotlight practical applications.
6. Interactive/directed problem-solving:
   a. Initial management issues that demonstrate the value of identifying functions and processes for integrating management activities: Initial activation, immediate notification of unified management, initial "size-up" (via notification with return confirmation/status reports) initial management mobilization and briefing via remote meeting.
   b. Initial management briefing conducted to establish initial objectives/actions/management structure/operational cycle and mobilize the management process (demonstrate the importance of the Planning Chief running the management process)

Outline of Day 2

1. Review previous day's key learning points
2. Presentation: Tiers 4-6: system description and discussion of illustrative examples to spotlight practical applications
3. Interactive/directed problem-solving: (continuation of earlier scenario)
   a. Managing the event at the jurisdictional level: Management, Operations, Logistics, Plans/Information, and Finance/Administration demonstrating how management organizes and coordinates these functions by integrating agencies and organizations
4. Lunch – experience-based expert presentation
5. Interactive/directed problem-solving (continuation of earlier scenario)
   a. Managing the event across tiers, including expected State roles and integration of Federal support
6. Presentation: Demobilization, recovery, and organizational learning
7. Discussion: Implementation
8. Closing remarks and course critique.

NOTES

Appendix A:
MSCC Management System Assumptions

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MSCC Management System Assumptions

Several assumptions were made in developing the MSCC Management System. These assumptions are delineated below to help the reader understand the basis and rationale for the development of this document.

Management Guidance Sought for Incident Response

Across the United States, acute-care medical providers and public health officials are recognizing the need for effective management of mass casualties and unusual types of injury and illness that exceed prior preparedness levels. Multiple interviews and discussions reflect the following prevalent views:

- Hospital-based and other acute-care medical providers are challenged by the sizable and increasing volume of literature, courses, Internet sites, and other materials being produced on medical surge capacity.
- Hospital-based and other acute medical providers seek guidance that explicitly outlines important management, operations, and support components necessary for response to complex medical incidents. Many past efforts fall short because either they focus entirely on operations (e.g., teaching triage systems) or they present only specific, isolated event parameters (e.g., characteristics of specific biological agents).
- Guidance, while specific, must also provide flexibility and allow for change that addresses the identified needs. In addition, it must "fit" within individual systems and traditions so that it is consistent with established approaches.

A Management System Must Have Practical Applications

The MSCC Management System must provide a *practical* organizational framework for current public health, acute-care medical, and emergency management systems. It must consider the diversity in management and practice that resides among stakeholders, especially in the private medical sector. Securing buy-in from private medical entities presents a formidable challenge, with success contingent on demonstrating the importance of an emergency response organizational structure that varies from day-to-day operations and provides such benefits as effective incident planning for emergency response.

Planning Must Consider the Interface Between State and Local Agencies

Traditionally, emergency management in the United States has been primarily a local responsibility. This is an effective approach because of the immediate needs of victims. A major area that varies from this authority construct is public health, which has evolved more as a State power. The interface between State public health and local emergency management and medical response requires careful planning because time and resource imperatives must be met primarily through local response.

Input From Public Health and Medical Providers Enhances Incident Management

The *majority* of emergency and disaster events are managed by non-health/medical agencies. The integration of public health and medical disciplines into this management framework presents several advantages:

- Timely input by public health and medical managers at decision-making levels regarding life and safety issues for non-health responders.
- Ability to look at medical response priorities across all aspects of an incident and incorporate them into a single cohesive strategy.
- Promotion of a proactive rather than a reactive response by HCFs helps to ensure the continuity of medical operations during an incident.
- Hands-on instruction for public health and medical managers by jurisdictional managers who have extensive incident management experience.

Public Health and Medicine May Have Leadership Roles in Incident Management

Public health and medical disciplines must assume *the* leadership role in the management of certain events, such as bioterrorism, or other incidents involving unusual or large numbers of casualties. In these scenarios, public safety agencies, which traditionally are the lead agencies in community response, would then provide support. This represents a significant adaptation for medical and public safety groups

from their traditional roles in large-scale incident management. An effective "unified management" team, with a medical/health incident manager as the lead, may be the most effective way to accomplish this important task.

Healthcare Facilities Require Broad Support To Provide MSCC

To maximize MSCC, hospitals and other healthcare facilities (HCFs) require a broad range of support (e.g., logistical, information, financial, regulatory) to address their role in a potentially overwhelming event. These support needs are not well understood outside the hospital community.

Training Efforts Must Be Based on Established, Defined Response Systems

Many previous training efforts in incident management for healthcare personnel have not been well coordinated or based on defined hospital response systems. Effective training must be structured on existing and available systems. It must be adaptable to the healthcare circumstances so that, if participants don't have the necessary systems, the training will demonstrate how to develop and implement operational systems.

The U.S. Healthcare System Maintains Excellent Baseline Capabilities

Under normal conditions, excellent baseline capabilities exist to address everyday health and medical issues in most communities in the United States. The most cost-effective, reliable strategy in MSCC is to first provide system support to these existing resources to enhance their volume and range for medical evaluation and treatment.

There Are Finite Limits to MSCC

Any attempt to develop and implement MSCC strategies must acknowledge that definite limits exist because no system can have limitless capacity. Expectations for the end product must be established in accordance with these limitations (for example, mass casualty care cannot be provided

all at once, not all victims can be saved, and triage must be used to provide "the greatest good to the greatest number"). These realities should be carefully but clearly communicated to the public. Managing public expectations may be one of the most critical strategies in a challenging or overwhelming event.

Funding Is Available To Implement Management Systems

Significant Federal grants are being given to State and local public health agencies for emergency planning and training. Thus, money is available to implement management systems in the public health and private medical communities. The most efficient use of these funds is to define and implement management systems *before* the purchase of specific technologies.

Appendix B:
Incident Command (Management) System Primer for Public Health and Medical Professionals

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Incident Command (Management) System Primer

Traditionally, preparedness actions for public health and medical emergency or disaster response have focused on the operational (tactical) knowledge and skills required by *individuals* to respond. This has resulted in training programs developed primarily for such topics as victim triage or the characteristics of specific hazards (e.g., chemical or biological agents). Though this knowledge is important and has relevance, much of it is easily accessed during incident response and does little to maximize the capacities and capabilities of existing structures. In other words, teaching and training on these topics provides little in the way of strategic knowledge that improves the ability of individuals to respond as part of a cohesive *system*.

Management systems exist in most professional disciplines, but they have a wide range of primary objectives. Many businesses, for example, have developed systems with the primary objective of maximizing profits. The use of a well-described management system helps to optimally leverage available resources. It allows disparate personnel and resources to organize in a manner that allows them to achieve a desired outcome. Equally important is the ability of management systems to prevent discord and confusion among personnel, particularly when engaged in activities under stressful conditions. In emergency or disaster response, the primary objective of a management system should be to organize and coordinate disparate response assets to effectively address the incident issues, while minimizing risks (physical, financial, etc.) to responders. This was a primary motivation for the development of the Incident Command System (ICS).

The ICS was originally developed to help coordinate the multiple agencies and types of response personnel acting to control wild-land fires. The physical and financial risk in wild-land firefighting can be extreme when multiple agencies come together. Disparate organizations are able to work together effectively using ICS because, among other reasons, it establishes a common terminology and advocates a management-by-objectives philosophy.

Because ICS is based in the fire service, it is subject to parameters that allow for line authority, much like the military. This is not always possible when multiple organizations, including private entities, are involved in incident response. Therefore, the use of the term Incident Management System (IMS) has broader appeal and applicability. The difference between ICS and IMS is that, rather than line authority, IMS provides parameters that allow for more individual initiative while operating within those parameters.[1] The decision to participate in IMS is based on an understanding that, by doing so, an agency or individual can expect:

- Enhanced collective security;
- Increased information sharing; and
- Decreased confusion among responders due to coordination of response actions.

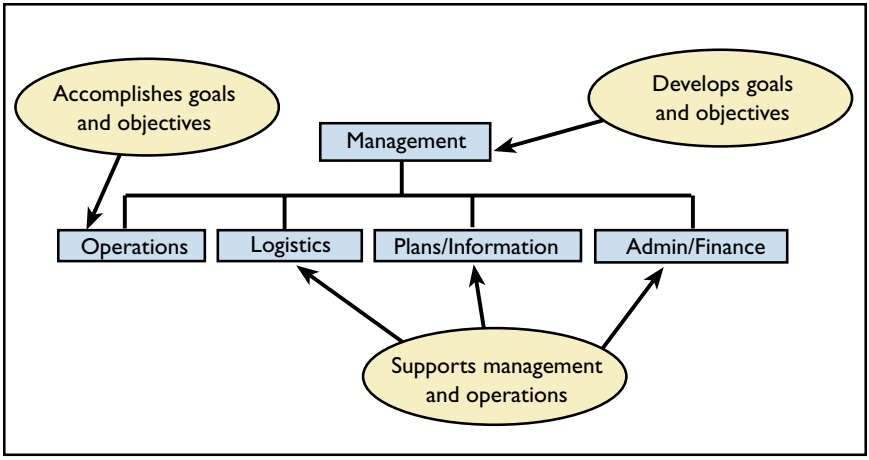
One of the main tenets of ICS/IMS is that a wide range of tasks are necessary in any incident response. These tasks can be grouped into categories that reflect similarities. For instance, all tasks that represent support of response personnel through the provision of accurate information can be grouped into the Plans/Information functional group. This approach has led to the description of five main functional areas that are necessary for response (Figure B-1):

- ***Management:*** provides overall direction of the response through the establishment of objectives for the system. This functional area usually includes other activities that are critical to providing adequate management:
  - *Public Information* manages information released to media and public;
  - *Safety* assesses hazardous and unsafe conditions and develops measures to ensure responder safety; and
  - *Liaison* provides coordination with agencies outside the response system.

[1]For the purposes of this discussion, the terms ICS and IMS are used interchangeably.

- ***Operations:*** achieves management's objectives through directed strategies and developed tactics.
- ***Logistics:*** supports management and operations with personnel, supplies, communications equipment, and facilities.
- ***Plans/Information:*** supports management and operations with information processing and the documentation of prospective plans of actions (also known as action plans, or APs). Critical components include:
  - Tracking of the status of resources and continual updates of the situation (event);
  - Development of contingency plans and long-range plans for management; and
  - Early development of demobilization plans.
- ***Administration/Finance:*** supports management and operations through tracking of such issues as reimbursement and regulatory compliance.

Figure B-1. Incident Management System



Public health and medical disciplines have focused historically on the Operations functions necessary for response. Experience demonstrates that problems will arise if inadequate attention is paid to the other functional areas:

- ***Protection of responders:*** Inadequate initial consideration for personal protective equipment (PPE) could cause responders to be exposed to an infectious disease (a Safety function).

- ***Management of strategies:*** Inadequate coordination of strategies and tactics for screening for a disease might promote confusion in the patient population if people receive different evaluation or treatment at various healthcare facilities (a Management function).

- ***Management of information:*** Inadequate information management might result in the transportation of patients to a hospital that is already overwhelmed with walk-in patients (a Plans/Information function).

Many of the most severe challenges during an incident response arise within the response system itself. Therefore, ICS/IMS devotes a large portion of its activities to supporting the response system, whether through Logistics, Plans/Information, or Administration/Finance.

The advantages of using ICS/IMS are not limited to organizing assets into similar tasks (functions and task groups).[2] This merely represents a "systems description." Another critical advantage provided by ICS/IMS is a "concept of operations," or a description of how the pieces fit together during successive stages of a response.

These are the critical processes that make ICS/IMS work. For example, a well-described goal of ICS/IMS is to transition from "reacting" to an incident to "proactively managing" an incident. Though many systems provide checklist procedures to be followed during the initial stages of a response, it is desirable to have managers proactively establish strategies and general tactics for response based on evolving incident and response parameters. Other, more finite, processes that allow ICS/IMS functions to interact are described as well. For instance, the simple act of holding an operations briefing can be complex under the stress of response. In some systems, established "rules" are used for meetings to prevent confusion, limit disruptions, promote the capture of information, and adhere to time

[2]A critical shortcoming of many ICS/IMS training programs is that they provide only a description of functions without also providing a description of how the functions interact.

limitations. This contrasts with the less efficient teleconference methods commonly used by the public health and medical disciplines during response to major events.[3]

With so many inherent advantages to the use of ICS/IMS, why has it not been readily adopted by many in the public health and medical disciplines? Part of the answer is that incident management systems can be complex to describe. When explained in an oversimplified manner, confusion results and there is a lack of understanding of the applicability of ICS/IMS. In addition, ICS/IMS principles are typically described in the terms used where it was originally developed—wild-land fire services. As previously noted, many differences exist between this discipline and public health and medicine, most notably the existence of line authority. With inadequate explanations of ICS/IMS, personnel in public health and medical disciplines may be tempted to focus on the simple answers when preparing for an event. This leads them to concentrate on specific technologies that can be purchased as opposed to how to structure an incident response.

Increasingly, public health and medical entities are realizing the importance of organizing response according to ICS/IMS principles. Many hospitals have adopted the Hospital Emergency Incident Command System (HEICS). Others have implemented their own versions of hospital incident command. Some public health departments have begun to adopt systems approaches to managing complex health events. The adoption of these ICS/IMS principles will only increase in importance with the Federal Government's completion of the new National Incident Management System (NIMS). This system relies heavily on ICS/IMS management concepts. For health and medicine to be considered equal partners and fully integrated into the response community, the concepts put forth in ICS/IMS should form the basis of their response systems. Without this foundation, it will become increasingly difficult for public health and medicine to maximize their roles in incident response.

[3]Personal observations of the MSCC project coordinators during the anthrax response in the National Capital Region in 2001, as well as during the TOPOFF I and II exercises and other incidents.

NOTES

Appendix C:
What Is An Incident Action Plan?

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WHAT IS AN INCIDENT ACTION PLAN?

An incident action plan (IAP) formally documents incident goals, objectives, and the response strategy defined by incident management during response planning. It contains general tactics to achieve goals and objectives within the overall strategy, while providing important information on event and response parameters. Equally important, the IAP facilitates dissemination of critical information about the status of response assets themselves. Because incident parameters evolve, action plans must be revised on a regular basis (at least once per operational period) to maintain consistent, up-to-date guidance across the system.

The following should be considered for inclusion in an IAP:

- Incident goals (where the response system wants to be at the end of response)
- Incident objectives (major areas that must be addressed to achieve the goals)
- Response strategies (priorities and the general approach to accomplish the objectives)
- Response tactics (methods developed by Operations to achieve the objectives)
- Organization list with ICS/IMS chart showing primary roles and relationships
- Assignment list with specific tasks
- Situation updates and assessments
- Resource status updates
- Health and safety plan (to prevent responder injury or illness)
- Communications plan (how functional areas can exchange information)
- Logistics plan (e.g., procedures to support operations with equipment, supplies, etc.)
- Responder medical plan (providing direction for care to responders)
- Incident map (i.e., map of incident scene)
- Additional component plans, as indicated by the incident.

What follows is an example of an individual healthcare facility (HCF) action plan, as it might appear following response planning by the HCF incident management team. This is meant only to give the reader a general idea of how the components in the foregoing list might be described in an HCF action plan during emergency response. In reality, the information included in an action plan will vary depending on the incident circumstances and the type of response asset.

Sample Hospital Action Plan

Scenario: contagious disease outbreak with limited numbers of patients.

- HCF goal: to protect the facility, personnel, and non-incident patients from the effects of the hazard (i.e., infectious disease) while providing optimal care to incident victims.

- HCF objectives:
  - Maintain safety of HCF personnel;
  - Maintain safety of non-incident patients; and
  - Provide care to infected, exposed, or concerned patients.

- HCF strategies and tactics:
  - Activate appropriate assets in the hospital to address general need for increased patient volume (incident management team, emergency department (ED), laboratory personnel, etc.);
  - Establish the operational period for HCF response planning;
  - Secure portals of entry into the HCF to monitor for entry of infected/contagious patients;
    - Post signs that contain easy-to-understand instructions for potential incident victims to decrease the likelihood of disease transmission.
    - Post security at each entrance (with personal protective equipment (PPE)) to monitor purpose of visit.[1]
    - Brief ED triage personnel and provide them with PPE. [1]

[1] This demonstrates the importance of sharing incident action plans that contain general strategies and specific tactics. If one HCF has personnel wearing PPE while other HCFs do not, the staff and the general public will be confused and will potentially lose trust in the incident management at the HCF.

  - Monitor staff for signs/symptoms of illness (services provided by the HCF occupational health staff);
    - Unit leader to perform check at shift change.
  - Provide for infection control
    - Distribute PPE to HCF staff;
    - Provide instruction to HCF staff on the use of PPE; and
    - Provide instruction to staff on procedures that are high risk for transmission of agent.

- HCF resources assigned:
  - Security personnel (numbers assigned);
  - ED (including staff to augment response in ED);
  - Occupational health personnel (to monitor employee health);
  - Infection control personnel (assisting with instructions and delivery of PPE); and
  - Personnel pool staff available to supplement above assignments.

- HCF event updates:
  - Information relevant to internal facility operations:
    - Number of patients screened and released in ED over the past 24 hours;
    - Number of patients admitted with diagnosis of suspected disease;
    - Number of patients admitted with confirmed disease (placed in cohort isolation);
    - Information on known patient-to-staff transmission of disease (or lack thereof); and
    - Updates on case definition, risk factors for contracting the disease, and other new information.
  - Information relevant to external operations:
    - Number of patients screened in all jurisdictional and regional EDs over the past 24 hours;
    - Number of patients admitted with suspected disease in all jurisdictional and regional EDs;

    - Number of patients admitted with confirmed disease in all jurisdictional and regional EDs;
    - Number of cases of nosocomial and hospital staff cases of disease in jurisdictional and regional HCFs; and
    - Description of the Tier 3 response to date (including higher tiers as relevant).

- Section updates:
  - Incident Management;
  - Operations: particular emphasis on staffing;
  - Logistics: including emphasis on where and how to obtain PPE and prophylaxis;
  - Plans/Information: emphasis on turning in functional area reports by pre-designated times; and
  - Administration/Finance

- Safety message:
  - Coordinated with the healthcare coalition (Tier 2) and jurisdictional authorities (Tier 3) to promote a uniform message to HCF personnel in the jurisdiction.
  - Covers infection control, PPE, prophylaxis, extended incident stress and other topics.

- Communications message:
  - Internal: contact method for emergent messages and routine functional area updates.
  - External: provides explanation for the differences in communication channels for strategic issues (contact external agencies through HCF management function) and for tactical issues (direct contact with external responders).

- Event projections: as available.

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Appendix D: Glossary

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Glossary

Adequate: Implies a system, process, procedure, or quantity that will achieve a defined incident response objective.

Chief: The Incident Command System (ICS) title for individuals responsible for command of the functional ICS sections: Operations, Plans/Information, Logistics, and Finance/Administration. This group is collectively referred to as the General Staff.

Command Staff: ICS group that consists of the Information Officer, Safety Officer, Liaison Officers and senior advisors. They report directly to the Incident Commander, and may have an assistant or assistants, as needed. Under IMS, they are referred to as the Management Staff.

Complex Incidents: Events where the victims have unusual medical needs or require medical care that is not readily available. These medical needs may be very difficult to adequately define or address without specialized expertise, even with only a few casualties.

Contingency Plan: Proposed strategy and tactics (often documented) to be used when a specific issue arises or event occurs during the course of emergency or disaster operations.

Disaster ("Major"): As defined in the Stafford Act, a "major disaster" is any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

Emergency (Federal): As defined in the Stafford Act, any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States.

Emergency Management: Describes the science of managing complex systems and multidisciplinary personnel to address extreme events, across all hazards, and through the phases of mitigation, preparedness, response, and recovery.

Emergency Management Program (EMP): Encompasses all emergency management activities conducted by a response organization, and may be organized by component plans: Mitigation Plan, a Preparedness Plan, a Response Plan, and a Recovery Plan.

Emergency Operations Center (EOC): The EOC is used in varying ways at all levels of government and within private industry to provide coordination, direction, control or support during emergencies.

Emergency Operations Plan (EOP): The "response" plan that an entity (facility, jurisdiction, State, etc.) maintains for reacting to any hazard event. It provides action guidance for management and emergency response personnel.

Emergency Support Function (ESF): As defined in the National Response Plan, an ESF refers to a group of capabilities of Federal departments and agencies to provide the support, resources, program implementation, and services that are most likely to be needed to save lives, protect property, restore essential services and critical infrastructure, and help victims return to normal following a national incident. An ESF represents the primary operational level mechanism to orchestrate activities to provide assistance to State, Tribal, or local governments, or to Federal departments or agencies conducting missions of primary Federal responsibility.

Exceptional: Refers to unusual numbers or types of victims, impacted medical care systems, or other very adverse conditions.

Federal: Of or pertaining to the Federal Government of the United States of America.

Finance/Administration: The ICS functional area that addresses the financial, administrative, and legal/regulatory issues for the incident management system. It monitors costs related to the incident, and provides accounting, procurement, time recording, cost analyses, and overall fiscal guidance.

First Responder: Refers to individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers as defined in Section 2 of the Homeland Security Act of 2002 (6 U.S.C. 101). It includes emergency management, public health, clinical care, public works, and other skilled support personnel (e.g., equipment operators) that provide immediate support services during prevention, response, and recovery operations.

Functional Area: A major grouping of the similar tasks that agencies perform in carrying out incident management activities.

Function: In the Incident Command System, refers to the five major activities (i.e., Command, Operations, Plans/Information, Logistics, and Finance/Administration). The term function is also used when describing the activity involved (e.g., the planning function).

Hazard: A force or agent with the ability to cause adverse human physical or psychological effects (injury, death) and/or significant economic damage.

Hazard and Vulnerability Analysis (HVA): A study that identifies possible hazards and the susceptibility of an organization to the hazard impact. The HVA provides guidance for mitigation and preparedness plans in an emergency management program.

Homeland Security Presidential Directive-5 (HSPD-5): A Presidential directive issued on February 28, 2003, and intended to enhance the ability of the United States to manage domestic incidents by establishing a single, comprehensive national incident management system.

Incident: An actual or impending hazard impact, either human caused or by natural phenomena, that requires action by emergency personnel to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Action Plan (IAP): The document in ICS/IMS that guides the response for that operational period. It contains the overall incident objectives and strategy, general tactical actions and supporting information to enable successful completion of objectives. The IAP may be oral or written. When written, the IAP may have a number of supportive plans and information as attachments (e.g., traffic plan, safety plan, communications plan, and maps).

Incident Commander (IC): The individual responsible for the management of all incident operations at the incident site. Also referred to as the Incident Manager.

Incident Command System (ICS): Also referred to as the Incident Management System. The combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management

of resources for emergency incidents. It may be used for all emergencies, and has been successfully employed by multiple response disciplines. ICS is used at all levels of government (local, State, Tribal, and Federal) to organize field level operations.

Incident Management Post (IMP): The location at which the primary command functions are executed. The IMP may be co-located with the incident base or other incident facilities. May also be referred to as an Incident Command Post (ICP).

Incident Management Team (IMT): The Incident Manager, and appropriate Command (Management) and General Staff personnel assigned to an incident.

Incident Objectives: Statements of guidance and direction necessary for response to an incident. Strategy and tactics are developed to achieve incident objectives. Incident objectives are based on realistic expectations of what can be accomplished when allocated resources have been effectively deployed. Incident objectives must be achievable and measurable, yet flexible to allow for strategic and tactical alternatives.

Joint Information Center (JIC): A center established to coordinate the public information activities for a large incident. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating Federal agencies collaborate at the JIC, as well as public information officials from participating State and local agencies.

Jurisdiction: In the context of this handbook, it refers to a geographic area's local government, which commonly has the primary role in emergency response.

Liaison: In ICS, it is a position(s) assigned to establish and maintain direct coordination and information exchange with agencies and organizations outside of the specific incident's ICS/IMS structure.

Liaison Officer: A member of the Command Staff responsible for filling the senior liaison function with representatives from cooperating and assisting agencies.

Local Government: (HSPD-5 definition) A county, municipality, city, town, township, local public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; an Indian Tribe or authorized

tribal organization, or in Alaska a Native Village or Alaska Regional Native Corporation; a rural community, unincorporated town or village, or other public entity. (As defined in Section 2 (10) of the Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 2135, et seq. (2002).)

Logistics: The ICS/IMS functional section that provides resources and other support services to incident management, operations, and the other ICS/IMS sections.

Management by Objectives: In the ICS, this is a proactive management activity that involves a three-step process to achieve the incident goal. The steps are: establishing the incident objectives, selection of appropriate strategy(s) to achieve the objectives, and the tactical direction associated with the selected strategy. Tactical direction includes: selection of tactics, selection of resources, resource assignments, and performance monitoring.

Management Meeting: In the incident management process, the meeting that establishes (or revises) the incident goals and objectives and the makeup of the ICS structure.

Measures of Effectiveness: Defined criteria for determining whether satisfactory progress is being accomplished toward achieving the incident objectives.

Medical Surge: Describes the ability to provide adequate medical evaluation and care in events that severely challenge or exceed the normal medical infrastructure of an affected community (through numbers *or* types of patients).

Mitigation: Activities designed to reduce or eliminate risks to persons or property or to lessen the actual or potential effects or consequences of a hazard. Mitigation involves ongoing actions to reduce exposure to, probability of, or potential loss from hazards. Examples include zoning and building codes, floodplain buyouts, and analysis of hazard-related data to determine where it is safe to build or locate temporary facilities. Mitigation can include efforts to educate governments, businesses and the public on measures they can take to reduce loss and injury.

Mobilization: The process and procedures used by all organizations for activating the organization and moving from a baseline to response operational mode. It may include assembling personnel, transporting resources that have been requested, or implementing procedures that will support an incident.

Multijurisdiction Incident: An incident that extends across political boundaries and/or response disciplines, requiring action from multiple governments and agencies to manage certain aspects of an incident. These incidents may best be managed under Unified Incident Management.

Mutual Aid Agreement: Written instrument between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment. An "agreement" is generally more legally binding than an "understanding."

National Incident Management System (NIMS): A system mandated by HSPD-5 that provides a consistent nationwide approach for Federal, State, Tribal, and local governments to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. To provide for interoperability and compatibility among Federal, State, and local capabilities, NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the Incident Command System; multiagency coordination systems; unified command; training; identification and management of resources (including systems for classifying types of resources); qualifications and certifications; and the collection, tracking, and reporting of incident information and incident resources.

National Response Plan (NRP): A plan mandated by HSPD-5 that integrates Federal Government domestic prevention, preparedness, response, and recovery plans into one all-discipline, all-hazards plan.

Operations Section: The ICS/IMS functional area responsible for all resources and activities that directly address the incident objectives. It develops all tactical operations at the incident, and in ICS, includes branches, divisions and/or groups, Task Forces, Strike Teams, Single Resources, and Staging Areas.

Planning (incident response): Activities that support the incident management process, including completing the incident action plan and support plans and accomplishing incident information processing. This is in contrast to preparedness planning, which is designed to ready a system for response.

Planning Meeting: A meeting held as needed throughout the duration of an incident to select specific strategies and general tactics for incident operations, and for service and support planning. In the incident management process, the planning meeting establishes strategy and priorities based upon the goals and objectives developed in the

management meeting. Remaining decisions for the action plan are achieved during this meeting.

Planning Section: In ICS/IMS, this functional area is responsible for the collection, evaluation, and dissemination of tactical information related to the incident, and for the preparation and documentation of the incident action plan and its support plans. The Planning Chief is responsible for running the management and planning meetings and the operations briefing, and the planning section supports these activities. The section also maintains information on the current and forecasted situation, the status of resources assigned to the incident, and other incident information.

Preparedness: The range of deliberate, critical tasks and activities necessary to build, sustain, and improve the capability to protect against, respond to, and recover from hazard impacts. Preparedness is a continuous process. Within NIMS, preparedness involves efforts at all levels of government and the private sector to identify threats, to determine vulnerabilities, and to identify required response plans and resources. NIMS preparedness focuses on establishing guidelines, protocols, and standards for planning, training and exercise, personnel qualifications and certification, equipment certification, and publication management.

Prevention: Actions to avoid a hazard occurrence, or to avoid or minimize the hazard impact (consequences) if it does occur. Prevention involves actions to protect lives and property. Under HSPD-5, it involves applying intelligence and other information to a range of activities that may include such countermeasures as deterrence operations; heightened inspections; improved surveillance and security operations; investigations to determine the full nature and source of the threat; public health and agricultural surveillance and testing processes; immunizations, isolation, or quarantine; and as appropriate specific law enforcement operations aimed at deterring, preempting, interdicting, or disrupting illegal activity, and apprehending potential perpetrators and bringing them to justice.

Private Sector: Organizations and entities that are not part of any governmental structure. It includes for-profit and not-for-profit, and formal and informal structures, including commerce and industry, non-governmental organizations (NGO), and private voluntary organizations (PVO).

Processes: Systems of operations that incorporate standardized procedures, methodologies, and functions necessary to effectively and efficiently accomplish objectives.

Public Health Emergency: Defined by the Model State Emergency Health Powers Act (MSEHPA): An occurrence or imminent threat of an illness or health condition that is believed to be caused by: (1) bioterrorism; (2) the appearance of a novel or previously controlled or eradicated infectious agent or biological toxin; (3) a natural disaster; (4) a chemical attack or accidental release; or (5) a nuclear attack or accident. It must pose a high probability of a large number of deaths in the affected population, or a large number of serious or long-term disabilities in the affected population, or widespread exposure to an infectious or toxic agent that poses a significant risk of substantial future harm to a large number of people in the affected population.

Public Information Officer: Official at headquarters or in the field responsible for preparing and coordinating the dissemination of public information in cooperation with other responding Federal, State, Tribal, and local agencies. In ICS/IMS, the term refers to a member of the Command Staff responsible for interfacing with the public and media and the Joint Information Center.

Recovery: The phase beyond response that addresses physical and financial restoration of the impacted population and area, including developing and implementing strategic plans for full restoration, improvement and growth. Activities include development, coordination, and execution of service- and site-restoration plans; the reconstitution of government operations and services; individual, private-sector, and public-assistance programs to provide housing and to promote restoration; long-term care and treatment of affected persons; additional measures for social, political, environmental, and economic restoration; evaluation of the incident to identify lessons learned; and post-incident reporting.

Response: Activities that address the direct effects of an incident. Response includes immediate actions to save lives, protect property, and meet basic human needs. Response also includes the execution of emergency operations plans as well as activities designed to limit the loss of life, personal injury, property damage, and other unfavorable outcomes. As indicated by the situation, response activities may include applying intelligence and other information to lessen the effects or consequences of an incident; increased security operations; continuing investigations into nature and source of the threat; ongoing public health and agricultural surveillance and testing processes; immunizations, isolation, or quarantine; and specific law enforcement operations aimed at preempting, interdicting, or disrupting illegal activity, and apprehending actual perpetrators and bringing them to justice.

Resources: All personnel and major items of equipment, supplies, and facilities available, or potentially available, for assignment to incident or event tasks on which status is maintained.

Safety Officer: A member of the Command Staff responsible for monitoring and assessing safety hazards or unsafe situations, and for developing measures for ensuring personnel safety. The Safety Officer may have assistants.

Span of Control: The ICS/IMS concept that the management organization must be structured so that each supervisory level oversees a functional group sized to maintain effective supervision.

State: Any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any possession of the United States. (As defined in section 2 (14) of the Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 2135, et seq. (2002).)

Strategic: Strategic elements of incident management are characterized by continuous long-term, high-level planning by senior level organizations. They involve the adoption of long-range goals and objectives; the setting of priorities; the establishment of budgets and other fiscal decisions; policy development; and the application of measures of performance or effectiveness.

Surge Capability: The ability to manage patients requiring *unusual* or very *specialized* medical evaluation and care. Requirements span the range of specialized medical and health services, and include patient problems that require special intervention to protect medical providers, other patients, and the integrity of the medical care facility.

Surge Capacity: The ability to evaluate and care for a markedly increased volume of patients—one that challenges or exceeds normal operating capacity. Requirements may extend beyond direct patient care to include other medical tasks, such as extensive laboratory studies or epidemiologic investigations.

System: A clearly described functional structure, including defined processes, that coordinates otherwise diverse parts to achieve a common goal.

Tactical: Tactical elements of incident management are characterized by the execution of specific actions or plans in response to an actual incident or, prior to an incident, the implementation of individual or small unit activities, such as training or exercises.

Terrorism: Any premeditated, unlawful act dangerous to human life or public welfare that is intended to intimidate or coerce civilian populations or governments (National Strategy for Homeland Security, July 2002). It includes activity potentially destructive of critical infrastructure or key resources. It is a violation of the criminal laws of the United States or of any State or other subdivision of the United States in which it occurs. It can include activities to affect the conduct of a government by mass destruction, assassination, or kidnapping (Section 2 (15), Homeland Security Act of 2002, Pub. L. 107-296, 116 Stat. 2135, (2002)).

Threat: The likelihood of a hazard occurring.

Unified Command: Also referred to as Unified Incident Management. An application of ICS/IMS used when there is more than one agency with incident jurisdiction. Agencies work together through their designated Incident Commanders or Managers at a single location to establish a common set of objectives and strategies, and a single incident action plan.

Appendix E:
Additional Readings

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Additional Readings

(Project coordinators receive no financial benefit from the purchase or use of these materials.)

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NOTES

Individual Healthcare Assets (Tier 1)

Healthcare Coalition (Tier 2)

Jurisdiction Incident Management (Tier 3)

Management of State Response (Tier 4)

Interstate Coordination (Tier 5)

Federal Support (Tier 6)

Implementation and Training

Margin Index

To use, bend book in half and follow margin index to page with color marker

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