

Metropolitan Washington Council of Governments

NCR Surge Planning Task Force

June 10, 2005

**National Capital Region
Surge Capacity Concept of
Operations Plan**

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Dedication

This document represents the collected knowledge, skills and experience, but most of all, the dedication of many committee members, private sector partners, appointed and elected officials combined with subject matter experts over the past 5 or more years. The publishing of this document will make another step on the continuum of the “ladder to medical readiness”.

The first document, *Planning Guidance for the Health System Response to a Bioevent in the National Capital Region*, was published on September 1, 2001 by the Bioterrorism Task Force of MWCOG. The Task Force represented a cross-disciplinary, regional team convened to address biological and chemical terrorism preparedness and response. Many hours of individual work and collective committee review resulted in our first guidance document.

This was followed by a detailed plan entitled Regional Support ESF #8, which began defining in greater detail, the protective system being assembled by medical leadership in the NCR. A detailed plan for Syndromic Surveillance was completed, describing the unique NCR-Enhanced Surveillance System, designed by members of the Health Officials committee and their State partners with Johns Hopkins University Applied Physics Laboratory.

As the formal structure of the National Capital Region was put into place, the NCR senior policy group requested that a task force be created to articulate the Medical Surge capability and capacities within the region. This document builds on the extraordinary work that has done by the District of Columbia, the State of Maryland and the Commonwealth of Virginia, along with the local jurisdictions. As we move forward in our medical preparedness, we salute the contribution of the past that enabled us to move to a new level and await the future additional refinements, as we begin to measure our preparedness in the next phase of our work.

Executive Summary

This plan has been developed to coordinate the emergency response activities of the health care systems within the various federal, state, and local jurisdictions which make up the greater National Capital Region (NCR) during a natural or man-made catastrophic event, such as an earthquake or terrorist attack. Experience from past events and exercises shows time and again that the priority recommendations are to improve communications. Therefore, the intent of this document is to provide a framework for regional coordination and communication, not to provide operational details. For operational details the reader should consult plans developed by the states and local jurisdictions. This document is not meant to replace, supersede or dictate the response of sovereign jurisdictions but to pull them together and facilitate communication and coordination. In this document, the term *state* shall apply to the District of Columbia, the State of Maryland and the Commonwealth of Virginia. At the request of the jurisdictions, MWCOG serves as the facilitator for the jurisdictions of the region.

Separate work will begin soon to do benchmarking and gap analysis to assess regional health and medical needs in terms of resources and further planning needs.

In the belief that a strong management system is crucial to a successful outcome, the plan has adopted the concept of six management tiers described in the Department of Health and Human Services' *Medical Surge Capacity and Capability* handbook and has adapted them to fit the unique conditions in the NCR. The management tiers are:

- Management of Individual Healthcare Assets—focusing on local events
- Management of a Healthcare Coalition—when an event affects more than one jurisdiction
- Jurisdictional Incident Management
- Management of State Response
- Interstate Regional Management Coordination—when the entire region is affected
- Federal Support to State and Jurisdiction Management—in a national emergency

Despite the inclusion of three “states,” multiple counties, assorted cities and the seat of the Federal government, as well as independent medical practitioners and health care facilities, the NCR health and medical community has sought to craft a system that allows the region to function as an intra-state entity. In case of a large scale emergency, coordination will be achieved through the National Capital Region Health Information Group, supported by memoranda of understanding and established working relationships among the leaders.

The components of the health care community are many and varied. They include

- Health care facilities: private medical practitioners, hospitals, hospice, and other community services. This is where most direct health care occurs. Although these practitioners and institutions operate independently, they are also willing partners with the public health departments and are often the first to report an emerging disease or problem. A major concern in the hospital sector is surge capacity and capability, i.e., having sufficient additional staffed beds, equipment, supplies, medications, space and staff and having the ability to meet additional specialized needs.

- Public health departments—a government function in every jurisdiction to provide and, where appropriate, coordinate planning, assessment, direct medical care where none other exists, and assurance that appropriate health care services are being provided. Operating in concert with other state and federal agencies, and through a collection of local departments, the Chief State Health Officer directs the response to public health emergencies. Surge Capacity in this arena is the ability of the public health system to increase capacity not only for patient care, but also for epidemiologic investigation, risk communication, mass prophylaxis or vaccination, mass fatality management, and other activities. However, public health departments are woefully understaffed at the local, state and federal levels and UASI funds cannot be used to strengthen the system by the employment of public health professionals.
- Emergency Medical Services (EMS): primarily responsible for scene triage, treatment and transportation and, when possible, inter-facility transport assistance. EMS staff are responsible for scene management, certain patient care supplies, coordination of definitive care resources, support of the health care system and documentation of patient care records.
- Behavioral health services to address the acute and long-term behavioral health needs of the victims, their families, the response community and the general community. Best practices have been incorporated in local, state and regional plans to both treat persons suffering from terrorism and also to strengthen the community.
- Medical examiners to identify, examine, and provide other needed services for the dead and their families. Each state will follow its own mass fatality plan and memoranda of understanding will be developed among jurisdictions.

This plan is closely integrated with a number of other response plans at the Federal and State levels. The Federal government has developed several tools including NIMS, NRP, and 15 threat scenarios that have informed this planning process. As additional tools, standards and guides become available, the NCR will make use of them as well.

Contributing Organizations and Agencies

The MWCOG Senior Policy Group appointed state representatives to a committee and charged them with creating a medical surge plan. That group—the Medical Surge Planning Team, invited representatives from a variety of disciplines to join them as members of the surge team. The team then solicited input from a broader array of colleagues. This list includes the main groups represented. All ESF committees were also invited to have input.

Metropolitan Washington Council of Governments

District of Columbia Health and Medical Services Organizations

- District of Columbia Department of Health
- Medical Society of the District of Columbia
- DC Hospital Association

Maryland Health and Medical Services Organizations

- Maryland Department of Health and Mental Hygiene
- Maryland Institute for Emergency Medical Services Systems
- Prince George’s County Health Department
- Med-Chi. the Maryland State Medical Society
- Montgomery and Prince George’s Hospital Collaborative

Virginia Health and Medical Services Organizations

- Virginia Department of Health
- Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services
- Northern Virginia EMS Council
- Northern Virginia Hospital Alliance

Federal Government Health and Medical Services Organizations

- Department of Health and Human Services
- Department of Homeland Security
- US Army
- Federal Emergency Management Agency

Private Sector Health and Medical Services Providers

- Capital Hospice
- Medstar
- Kaiser Foundation Health Plan
- Inova Health System
- Prince George’s Hospital Center

MAP of the National Capital Region



The Federal definition of the National Capitol Region includes Maryland, Virginia, the District of Columbia, and the counties of Montgomery, Prince George's, Arlington, Fairfax, Loudoun and Prince William and the City of Alexandria. This is different from the MWCOG region of the District of Columbia, the counties of the NCR plus Frederick County, and 11 cities. In the homeland security arena, Frederick County participates fully in the COG planning process; however, they are excluded from the UASI funding stream for the NCR. COG has requested a change in the Federal definition to include Frederick County; this request is supported by the Health Officials Committee. For purposes of this plan, COG, Virginia and Maryland have taken leadership roles along with the District of Columbia. In this document, "NCR" and "MWCOG" both include Frederick County except when referring to UASI funding. **At the request of the jurisdictions, MWCOG serves as facilitator for this project.**

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1 Introduction

The events of 9/11 in the United States in the fall of 2001, some of which played out in the Washington D.C. area, resulted in additional, though limited, demands being placed on the health care systems—public and private—to respond to a large number of casualties. These events did, however, demonstrate the critical need for coordination among agencies—local, regional, state and federal—to respond to a large surge in demand for health care services. This plan is a response to that need in the National Capital region.

In this document, the term *state* shall apply to the District of Columbia, the State of Maryland and the Commonwealth of Virginia.

This document is not meant to replace, supersede, or dictate the state or local response plans of the District of Columbia, Maryland, or Virginia. Rather it recognizes the sovereignty of those political entities and the roles of the states' elected officials, Chief Medical Officers, and health care providers in responding to an emergency in a manner deemed most appropriate to protect the citizens of that jurisdiction. In fact, this document relies on the states' developing essential response procedures, including interstate coordination and communication.

The role of this plan is to enhance inter-agency and inter-jurisdictional response coordination and communication during a naturally occurring or man-made event that results in the potential for significant health impact, including, but not limited to large numbers of casualties requiring acute inpatient care, home care, quarantine and isolation, mass prophylaxis or behavioral health care, or causing large numbers of deaths.

This Concept of Operations (ConOps) paper has been developed by the Medical Surge Team, a team appointed by The Senior Policy Group of the NCR. The plan is intended to provide guidance to the members of the healthcare and public safety communities in case of a large-scale event with mass casualties in the National Capital Region. Such an event will require extensive coordination among the District of Columbia, the Commonwealth of Virginia and the State of Maryland, each of which will follow its own set of plans and procedures.

The intent of this document is to pull together existing plans at multiple levels into a coherent whole. It is not our purpose to dictate or interpret the planning needs for a particular locality or state. Rather, this document seeks to identify and link those common regional planning steps with applicable local response activities and provide a platform for sharing regional information and resources and for making joint decisions on a regional basis.

1.1 Statement of Purpose

This NCR Surge plan has been developed to coordinate the emergency response activities of the health care systems within the various federal, state, and local jurisdictions which make up the National Capital Region.

1.2 Mission Statement

The mission of the COG-facilitated surge planning team is to establish a collaborative process and complete Edition I of a Concepts of Operations (ConOps) document that will serve as the collaborative platform for Medical Surge Capacity and Capability within the NCR by

- Providing support to the Council of Government's Board and Senior Policy Group
- Communicating medical surge needs consistent with the National Incident Management System (NIMS) guidance and UASI grant requirements
- Establishing an integration process to ensure consistency within the coordinating command structure.
- Publishing a Concept of Operations (ConOps) that addresses medical surge capacity and capability across all health and medical functions. This plan is considered a constant work in progress, which will be amended as best practices and new threats emerge.
- Establishing methodologies for incorporation of ConOps best practices by involving subject matter experts and requesting appropriate State and local representative participation. These requests may be made by the committee chair.

Details of the specific state and local plans are contained in the appendices or, in the case of restricted documents, are shared via the Health and Public Safety Officials on a need-to-know basis. This document describes an overview of how it will work. It would be naive to say that the plan covers all aspects of medical surge. Rather, the relationships developed and the ongoing refinement of the system are considered the key strengths of the plan. As new information or new standards emerge, the team will continue to improve this document to meet the health and medical needs of the NCR.

1.3 Planning Assumptions

It is anticipated in the design of this plan that many response tasks—such as the specific steps for activating an emergency shelter—will be defined in local emergency plans. Therefore, only general reference will be made regarding these steps and the reader will be referred to the local and state procedures for details. Most important, it is critical for the reader to ensure that these basic procedures are developed immediately if they do not currently exist in the local emergency plan.

In developing plans for the NCR, it is important to assume that the region will have to be self-sufficient for up to 72 hours before Federal resources are available and in use.

Without dictating specifics, it is essential for each locality to ensure that planning measures have been developed to

- Alert and activate essential response personnel
- Designate trained on-call personnel to lead and participate in the community response and to request state and federal assistance
- Activate community response necessary to protect and support vital healthcare facilities
- Provide for the acute and long term care of all those who become ill or injured regardless of age and including those with behavioral health and other specialty care needs

- Receive, store, secure and distribute immunization, prophylaxis and other supplies.
- Identify, equip, supply and staff prophylaxis distribution or medical care (i.e. existing medical facilities or designated Neighborhood Emergency Help Centers (NEHC) with attention to patient access, site security, staffing, indemnification of facility owners and medical staff).
- Establish crisis management systems
- Identify non-health tasks related to surge including transportation, law enforcement, etc.
- Communicate essential information to the public

Comprehensive emergency planning assumes a basic command structure allowing for the efficient and effective deployment of resources. This response plan conforms to the National Incident Management System (NIMS).

However, a command structure in the public health arena differs significantly from that used in fire services and law enforcement. This is because the practice of medicine is highly individual, based on standards of care that may be modified on the basis of circumstances and because most medical care is practiced in private settings, such as hospitals, clinics and physicians' offices, that are not under the direction of public health officials. Instead of exercising *control* over medical facilities and practitioners, public health officials rely on their highly developed networks of people and organizations mutually dedicated to providing the highest possible level of care.

It is the role of public health to assure that needed medical services are provided—not to provide the services but to facilitate provision of services by others. Public health practitioners may specialize in

- Preventive care, such as immunizations, patient and community assessments, development and implementation of health interventions and education programs.
- Environmental programs involving clean water, food and air.
- Regulatory services including inspection of facilities and development of standards targeting local community threats.
- Disease control activities including epidemiology, investigation and containment of infectious disease
- Chronic disease focusing on awareness, community intervention and specialized activities targeted to epidemiological evidence intending to prevent the development or mitigate the effects of chronic disease.

The strong partnership with the entire community including hospitals, nursing homes, assisted living facilities, HMOs and private clinicians constitutes the “the public health system” of a community. Each component of the system contributes to the health of the community.

While public health seeks to assure and facilitate the provision of medical services, it is the role of private providers to deliver care. It is the role of EMS to assess the scene, triage patients, provide medical stabilization and transport to designated hospitals.

The response to any sudden onset or slow onset mass casualty event must be managed *in addition to* the delivery of basic services that are provided as a part of daily routine healthcare delivery (i.e. cardiac care, labor and delivery, trauma care, dialysis, etc.)

Conditions in the National Capital Region (and areas contiguous to this geographical region), including density of the population, significant road congestion, and limited healthcare facility reserve capacity will impair the likelihood of successful implementation of the forward movement of patients out of this region. This would be especially true in the context of a contagious infectious agent, where the movement of potentially exposed patients to an area as yet unaffected by contagion would likely be discouraged. The successful use of air evacuation of patients while potentially doable is fraught with limitations. Rotor wing assets, while available from civilian, municipal and military sources, are only capable of moving small numbers of patients at a time. Fixed wing assets are particularly scarce, especially given the current commitment of DOD air assets to the West Asia theater of operations.

State and Federal assets may not be immediately available to healthcare facilities in the National Capital Region, and may take as long as 48 hours for delivery to individual healthcare facilities. In certain circumstances, the total number of available goods may not meet the sudden rise in patient demand. For example, the Strategic National Stockpile currently has 3000 Eagle UniVent ventilators in total, with a plan to add an additional 2000 more by the end of 2005. These are divided amongst the 12 SNS stockpiles across the United States. A single catastrophic attack in any city in the United States could easily require the use of this entire stockpile, in one city, leaving other areas vulnerable to the interruption of critical medical intervention.

Hospitals operate on a routine basis with available resources matching demand as closely as possible. They are required to have in place (and in fact do have) plans to respond immediately to large increases in demand due to natural or other disasters resulting in a large number of injured or ill persons.

1.3.1 Regional Issues

Coordinated planning is particularly challenging in the metropolitan Washington area. For that reason and others, the jurisdictions of the region requested that MWCOCG serve as facilitator.

Most of these jurisdictions have developed their own general emergency response plans of varying complexity. Some have also developed local bioterrorism response annexes to their general plans. These plans have been reviewed by the State and are in concert with the Concept of Operations management system. In addition, we recognize that the Federal role in the NCR is significant and continues to evolve.

The Office of the NCR Director, appointed by the Department of Homeland Security, established a “Senior Policy Group” which proposes policies associated with the NCR as it relates to Maryland, Virginia and the District of Columbia. The Chief Administrative Officers of the COG region interact with the Senior Policy Group to assure local concurrence on suggested policy, or recommend policies and procedures to the NCR group. The collaborative processes in place serve to reconcile any unique cross-jurisdictional issues.

Consequently, this document is intended to provide a **platform of consistency** during an event, so that every locality across the region recognizes the need for the same appropriate response activities for all stages of a situation. How those response activities will be operationalized is detailed in state and local plans. Furthermore, it is the intent of this document to **encourage the establishment of**

appropriate and effective lines of communication for all of the various planning and response partners. Only with timely exchange of information may an effective regional response effort be implemented.

Maryland and Virginia have established State plans that incorporate their unique jurisdictional plans. DC serves as a jurisdiction and a state for the purpose of this effort. The process established by COG several years ago is organized to continually review and update the Concept of Operations (ConOps).

UASI requirements include a plan for tactical interoperability by October 31, 2005. The plans for this have not been completed, but it is likely that the region will not have one physical command center, but will stand up a virtual Joint Operations Center (JOC) based on established and future MOUs, mutual aid agreements, and communication systems that include the NCR jurisdictions, the states, and the city of DC supported by advanced communication systems. This paper posits, as well, a virtual *Health Information Group (HIG)*.

The other critical component of this plan is the region's unique relationship with the federal government and the quasi-federal status of the District of Columbia. Federal agencies play an important local role here as major employers and residents of the region. An important partner here is the Office of the Capitol Hill Physician, who provides medical care to members of Congress and other key Federal officials.

In recognition of the difficulty of coordinating the numerous local, state, and federal resources, and based on past experience, the federal agencies will play a strong role throughout an event, and may appoint a Federal Response Plan health sector coordinator representative who will join the Health Information Group (HIG) early in the course of a major incident.

However, the glue that will hold the region together in a large-scale emergency is the collaborative network among the jurisdictions—a network formed over time and based on mutual trust and understanding.

1.3.2 Surge Capacity and Capability

Basic to this plan are the joint concepts of medical surge capacity and capability. It is important to distinguish between the two: *surge capacity* is the ability to respond to a markedly increased number of patients; *surge capability* is the ability to address unusual or very specialized medical needs. The increased demand could be the result of a natural disaster, terrorism event or other public health emergency or could result from collapse of a critical system element. For example, if a higher volume of critically wounded people are presenting at the hospitals and there are insufficient beds and staff to care for them, the question is one of capacity. On the other hand, the issue of capability arises when a high volume of patients appear over time with symptoms of an emerging disease such as SARS or when a even a small number of patients appear with very specialized needs, such as children with extensive burns. In either case, the Public Health community (public safety providers, clinicians, acute care facilities, clinics, public health agencies) must deal with a highly specialized problem involving both staff and patient protection.

In the context of this plan, **healthcare surge capacity** is defined as the ability of a healthcare system to expand capabilities beyond normal services to meet sudden and/or sustained increased demand for medical care and public health resources. The expanded capacity must not only be able to accommodate an immediate short term surge, but must also be able to sustain response effort for an extended period (e.g., four to six weeks).

Although capacity and capability are important, a strong and well coordinated management system is at least equally important.

2 Management Tiers

Early in its planning, the COG team developed plans using four activation levels, with trigger events moving an incident from one level to the next. However, in September, 2004, the U.S. Department of Homeland Security released a planning publication called *Medical Surge Capacity and Capability*. That publication describes a management system with coordination and integration across six tiers of response. The COG committee has therefore sought to integrate the two planning models into its thinking. This outline is intended to provide an understanding of how the various components of the “public health system” work together at various stages of surge--from a local outbreak through a national event. Depending on many factors, the tiers may be modified to provide the very best medical care for the residents of the NCR.

Following the description of each tier is a conceptual matrix describing the EMS role in relation to public health functions. As with all events, close communication between Health and EMS is the key to response.

Tier 1—Local Event

Management of Individual Healthcare Assets: A well-defined Incident Management System (IMS) to collect and process information is in place in each NCR jurisdiction. Each healthcare asset has an information management process, as required by their credentialing system, to enable sharing of information as well as linkages to other health care facilities and higher management tiers.

Example: Local physicians have reported three patients with severe gastro intentional disease probably a Salmonella bacterium. The Local Health Department receives the report and begins the epidemiological investigations by interviewing the patients involved to determine a common source. Based on food and water history, and period of incubation, a hypothesis is formulated. The state is usually notified; however this is considered a local event. An intervention is developed to stop the spread of the disease. Patients are instructed on personal hygiene, if a food facility is involved scatterings inspect and take appropriate action, if a food item is though to be contained appropriate action is taken.

Health officials regularly keep their NCR colleagues informed of events that have potential impact on other jurisdictions, even if the impact may be limited to media interest.

The Incident Command System (ICS) may be employed to manage a jurisdiction-specific event. The states will support the local process, and monitor the extent and nature of the incident. The state health officials jointly analyze the need to establish an NCR Health Information Group (HIG).

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. In the NCR, each of the Health Care Facilities (HCFs) has adopted a plan in concert with the local and State Health Officials. These plans call for the establishment of a Hospital Incident Command (HIC) management system that has been exercised routinely and modified as appropriate to reflect best practices; such plans, including policies and procedures, are required by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). The Hospital, in concert with the Local Health Officials, will operate under internal procedures, using all unoccupied beds and services. They will increase staffing levels, initiate expedited discharge to open acute care beds and services, and cancel or postpone elective procedures. This is expected to free up about 30% of the beds for incoming surge patients.

In the event that the individual system is near capacity, the Local Health Official in concert with local and State or District Emergency Management systems, will coordinate a system for patient rerouting and management.

EMS Response

	Overt Event e.g., Explosion, Earthquake	Covert Event e.g., an Emerging Pathogen
1. Local Event	Dispatch & Response Limited Mutual Aid Communicate with Individual Hospitals Hospital Diversion Policies	Increase Universal Precautions Hospital Diversion

Tier 2—Manageable Event Affecting More Than One Jurisdiction

Management of a Healthcare Coalition: Coordination among local healthcare assets is critical to provide adequate and consistent care across an affected jurisdiction. This tier would assume spread of disease across jurisdictions, or mass casualties affecting more than one jurisdiction of one “state.” The local health officials, in concert with their State Health Officials, will coordinate as often as needed to integrate information sharing and management coordination among healthcare assets, and also establish an effective and balanced approach to integrating medical assets into the jurisdiction’s Emergency Operations Center (EOC). Local officials will consider, via Regional Incident communication and Coordination System (RICCS) conference call system establishing Emergency Operations Centers.

Example: the state epidemiologist, in reviewing state reports on increasing incidence of salmonella-like organisms, notices that a neighboring county or city also has a significant increase in such cases and forms a hypothesis that the two outbreaks may be linked. Once clinical specimens are furthered studied and determined to be the same causative organism, or absent laboratory confirmation, it is determined that the cases are epidemiologically linked.

The outbreak is at this time isolated to only one state. However the state epidemiologists are determining the need for enhanced communication by opening the HIG. Disease trends are being traced through ESSENCE along with the development of “line lists” of confirmed and suspect cases meeting the case definition.

Judgment is exercised at the elected level as to the need to open an emergency operations center, in which case the local health official will report through the local EMC and to the State Department of Health.

In a major incident, HCFs may lack the necessary resources and /or information to individually provide all the necessary services. The Health Information Group (HIG) coordinates activities among all medical and health assets in the jurisdiction. **This tier emphasizes coordination and cooperative planning rather than truly unified management of all public and private medical and health assets.**

Tier 2 includes

- A clearinghouse function, ensuring that all HCFs have the information they need to adequately prepare for and respond to major events
- Reliance on NCR-Enhanced Surveillance system Physician reporting and other indicators to monitor extent of the event, along with other indicators
- Medical mutual aid—the redistribution of personnel, facilities, equipment, or supplies to HCFs in need during a crisis

EMS Response

	Event Is Well Defined	Hypothesis has been communicated; Prophylaxis has been described
2. More than 1 Jurisdiction	Dispatch and Response Increased Mutual Aid Central Hospital Coordination Hospital Diversion	Increase Universal Precautions Hospital Diversion

Tier 3—Regional Event

Jurisdictional Incident Management: Despite the unique characteristics of the region, the jurisdictions of the NCR have crafted a system that when an incident impacts jurisdictions in more than one “state” allows the region to function as if it were an intra-state region in spite of the cross-border issues. A jurisdiction’s EOC integrates healthcare assets with other response

disciplines to provide structure and support. The local Health Officials in partnership with the State Health Officials may convene the virtual Health Information Group (HIG). Depending on the nature of the event, the NCR may have established the NCR-JOC, in which case the HIG will designate a liaison. The HIG will discuss medication protocols and modification of standards of care as needed to address the nature of the event. The primary focus will be the establishment of a realizable medical information system. One medical coordinator will be appointed to coordinate with the NCR JOC. Staffing this position may rotate among jurisdictions.

Example: Cases are now detected in other jurisdictions outside the original state. The HIG is activated by the three state designees along with the local health officials. Agreement is reached on the case definition, the rule-out methodology, the frequency of reporting, and the need for community NCR interventions. In the event an NCR Joint Operation Center is activated, the HIG will appoint a senior medical official to be the liaison to the HIG.

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. The HIG will discuss deploying medication protocols as needed to address the nature of the event.

The NCR regional director will determine the extent of federal aid available to support the region. As the National Response Plan unfolds, other non-NCR regional assets may be deployed. The working assumption requires the health system to be self-sufficient for 72 hours after the event.

EMS Response

	Event is Well Defined	Hypothesis has been Communicated; Prophylaxis has been Described
3. Regional Event	Dispatch & Response Task Force & Work Group Response EMS Supervisors to Hospital Communication Coordination Centers	Increase Universal Precautions Hospital Diversion Increased Immunizations of Personnel

Tier 4—State Response

Management of State Response: *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) levels, or it may coordinate multi-jurisdictional incident response through the use of the State Emergency Operations Center. Plans exist at the NCR State level that delineate numerous functions, roles and responsibilities, ensuring that the full range of State health and medical resources can be brought to bear. These plans and systems have been fully exercised by all the NCR participants.*

Example: The extent of the outbreak is judged by the States to require the use of the State Emergency Operations Center (EOC). The state EOCs coordinate with the other states and the locals, consideration is given to request aide from neighboring states.

EMS Response

	Active Event in Process	Pathogen Known; Specific Prophylactic Measures as Directed by Public Health for First Responders
4. State Response	Dispatch & Response Task Force & Work Group Response EMS Supervisors to Hospital Communication Coordination Centers State EOC opens State Assistance to coordinate Resources w/locals	Increase Universal Precautions Hospital Diversion Increased Immunizations of Personnel Support of Public Health for Transport of Resources

Tier 5—When the Entire NCR is Affected

Interstate Regional Management Coordination: *Effective mechanisms have been established via the Health Information Group (HIG) to promote incident information coordination among affected NCR States. This medical management system will be established by the state senior health officials in concert with the local health officials. The incident command model will be deployed; jurisdictions will execute their specific plans in concert with health system partners. Depending on circumstances, the HIG may become part of a larger overall JOC, in which case the designated Medical Coordinator will become part of the larger system, and a medical incident commander will manage the Health Information Group (HIG) to promote incident management coordination among affected States. This mechanism will ensure consistency in regional response through coordinated incident planning, enhanced information exchange among interstate jurisdictions, and will maximize the overall planning system 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.*

EMS Response

	Active Event	Known Pathogen, First Responders Receiving Prophylaxis, Consideration of Quarantine of Unprotected First Responders/Specific Plan for their
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		Families in Place
5. Entire NCR Region	Dispatch & Response Task Force & Work Group Response EMS Supervisors to Hospital Communication Coordination Centers State Assistance to coordinate Resources w/locals State EOCs Coordinate activities	Increase Universal Precautions Hospital Diversion Increased Immunizations of Personnel Alternate Destination Central Coordination of Transport of Affected Patients

Tier 6—National Emergency

Federal Support to State and Jurisdiction Management: *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. In the event that senior officials determine that weapons of mass destruction have been deployed, Presidential Decision Directive-62(PDD-62) will be invoked. The specific command structure can be referenced in Presidential decision directive 39(PDD-39).*

By adopting this six tier approach, the COG region expects to be more readily compliant with the National Incident Management System (NIMS). NIMS compliance is required of all Federal departments and agencies, as well as State and jurisdictional organizations that seek Federal preparedness assistance in the form of grants and contracts.

EMS Response

	Threat has been clearly identified and counter-measures have been taken
6. National Response	Coordinate with NDMS Transports Accept assistance from DMAT teams Alternative Destinations

3 Unified Operations

The most important core element of coordination across the region is the adequate sharing of information. Within the health field this is complex because of the multiple sources of information and wide variety of types of information needed, the wide variety of subject matter experts who must be involved and the frequent time delays for confirmation of information. Information is gathered from, and decisions are made in: private facilities, local health departments, state health departments and by federal agencies, based on information from sources above, below and outside the chain of command as well as across parallel chains of command. Information can be delayed by the slow onset/recognition of an event and/or by the time needed for laboratory testing. Laboratory

results frequently take up to 72 hours. Local private and public health officials contribute to and implement decisions made both by state officials and local elected officials. Sharing information across the region accurately and in a timely fashion requires commitment and intention to make it organized and efficient as well as emphasizing accuracy and inclusion. It is important to organize conference calls and other ways of sharing information so they are efficient and effective.

The single most important feature of this plan is a declared commitment by all participants to share, as soon as possible, what they know -- including what they don't know or their qualms about the accuracy of information -- within a structure that will be a time efficient way to reduce rumors, clarify sources and provide the latest information for people who are making contingency plans and/or are involved in response decisions.

The commitment will include the designation of communications liaisons who will work closely with their agency leads to push, pull and filter information for their organization. These liaisons will follow protocols and check lists for content and contacts in an effort to keep all stakeholders accurately and adequately informed. The liaisons will make every effort to pass on information they have, will request information their agency needs, and be responsible for filtering incoming information to discard or pass on to the appropriate people within their organization. Information that is legally confidential or classified will be shared only with those qualified to receive it.

In addition, the region is building a "Health Information Group," (HIG) which is separate from the chain of command, with the purpose of ensuring uniform communication of health related information regarding a hazard or incident in the NCR.

3.1 Health Information Group

The Health Information group (HIG) uses an information hierarchy to improve the sharing of information. The HIG is facilitated by the top health officials in each state/district or their designees. And the participants include state agencies and local health departments, along with partners such as hospitals, federal agencies, subject matter experts, and EMS as appropriate. The goal of this group is solely information sharing so that the myriad of people who must make decisions will have accurate and complete information on which to base their decisions.

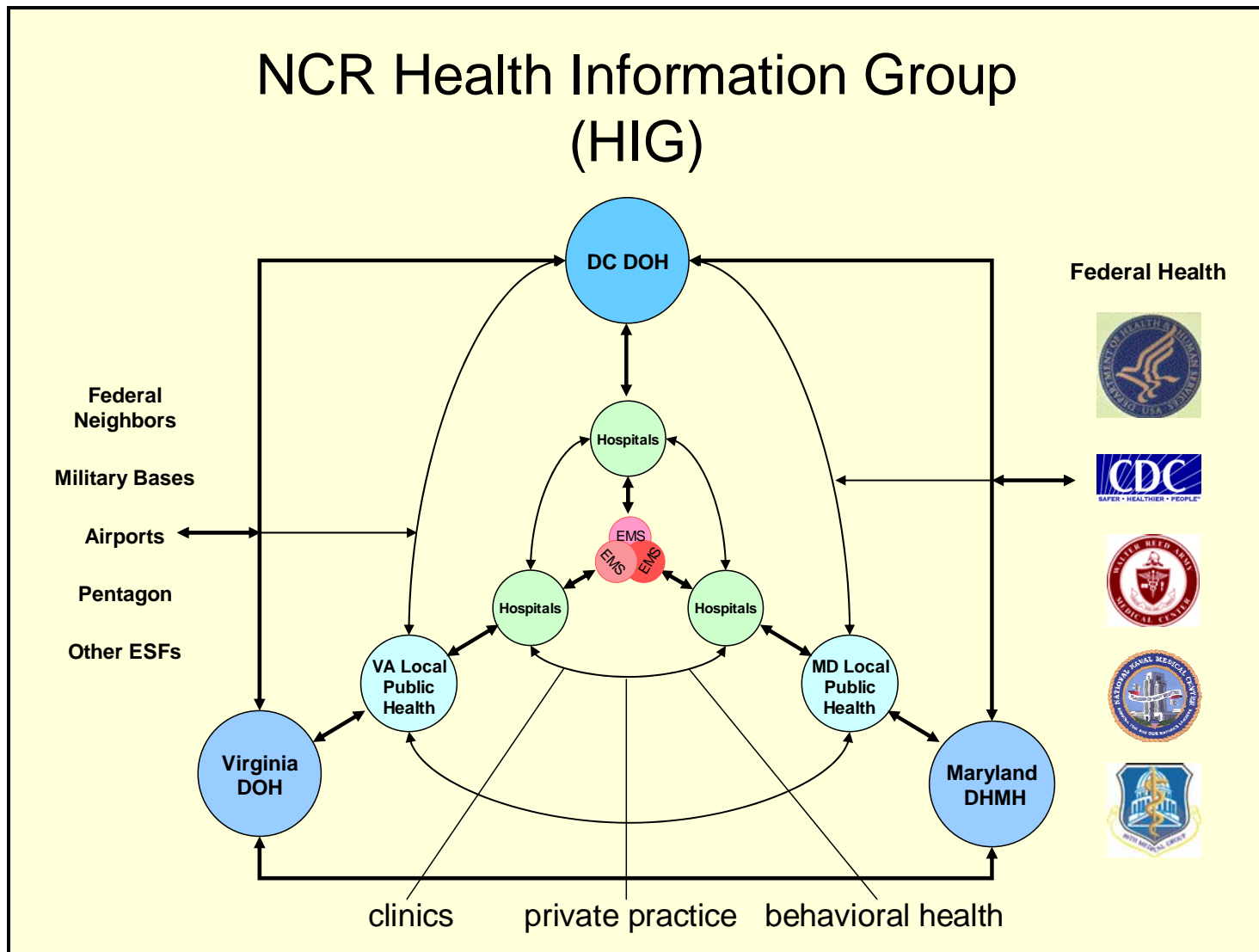
The following organization chart is an attempt to depict the information sharing process which takes place among senior health officials at the local and state levels. Because of the complexity of the health system, including public and private sectors, and the many variables in types of information available and needed for different events, it is difficult to reduce the scientific and intuitive process of medical decision-making into a flow diagram. Communications channels include text alerts, conference calls, radio systems, e-mail, and (in the future) Web-based incident tracking (such as WebEOC). Senior state and local officials may use a different network structure depending on the nature of the event. The Health Information Group (HIG) may be convened by any one state health official and local health officials may request that their state convene the group. This virtual structure is one way of viewing a medical assessment process in an emerging or confirmed medical

event. It is a means of assessing potential cases, establishing a case definition or discussing the medical management and medication options. It provides a platform for reviewing surveillance criteria, including updating the number of suspect and confirmed cases, creating modifications to the specificity or sensitivity of NCR-Enhanced Surveillance System. This sharing, especially if by conference call, will be supported by additional linkages to expand the reach to additional members of specific segments of the health system. For example, a conference call might have three hospital representatives who would then be responsible for ensuring the flow of information to and from all hospitals.

Within the total HIG there are sub-rings which will manage their own communications: Local health departments; hospitals, and EMS. The local health officials, functioning as the COG Health Officials Committee regularly share information directly with each other, and make up the R-ESF 8 core group of the Regional Incident Communications and Coordination system (RICCS). Within that group, any health official has the ability to send an alert or schedule a conference call, and may include other participants as needed in a specific situation. They also have the ability to send messages to an R-ESF 8 “information only” group.

The diagram although simplified to save space (Emergency Medical Services do not actually overlap, although they work in a very coordinated fashion), illustrates the idea of concentric circles of horizontal communications along with the vertical flow of information within each state. This diagram does not represent command or decision making.

Figure 1: Communications network(s)



The HIG would be activated to facilitate communication among the health community during any health care incident. It is intended to:

- Obtain accurate information concerning the instigating event
- Detail response actions initiated prior to the call
- Gain information for appropriate response and treatment protocols
- Discuss continued activities

The HIG is not intended to serve as a structure for command of an incident.

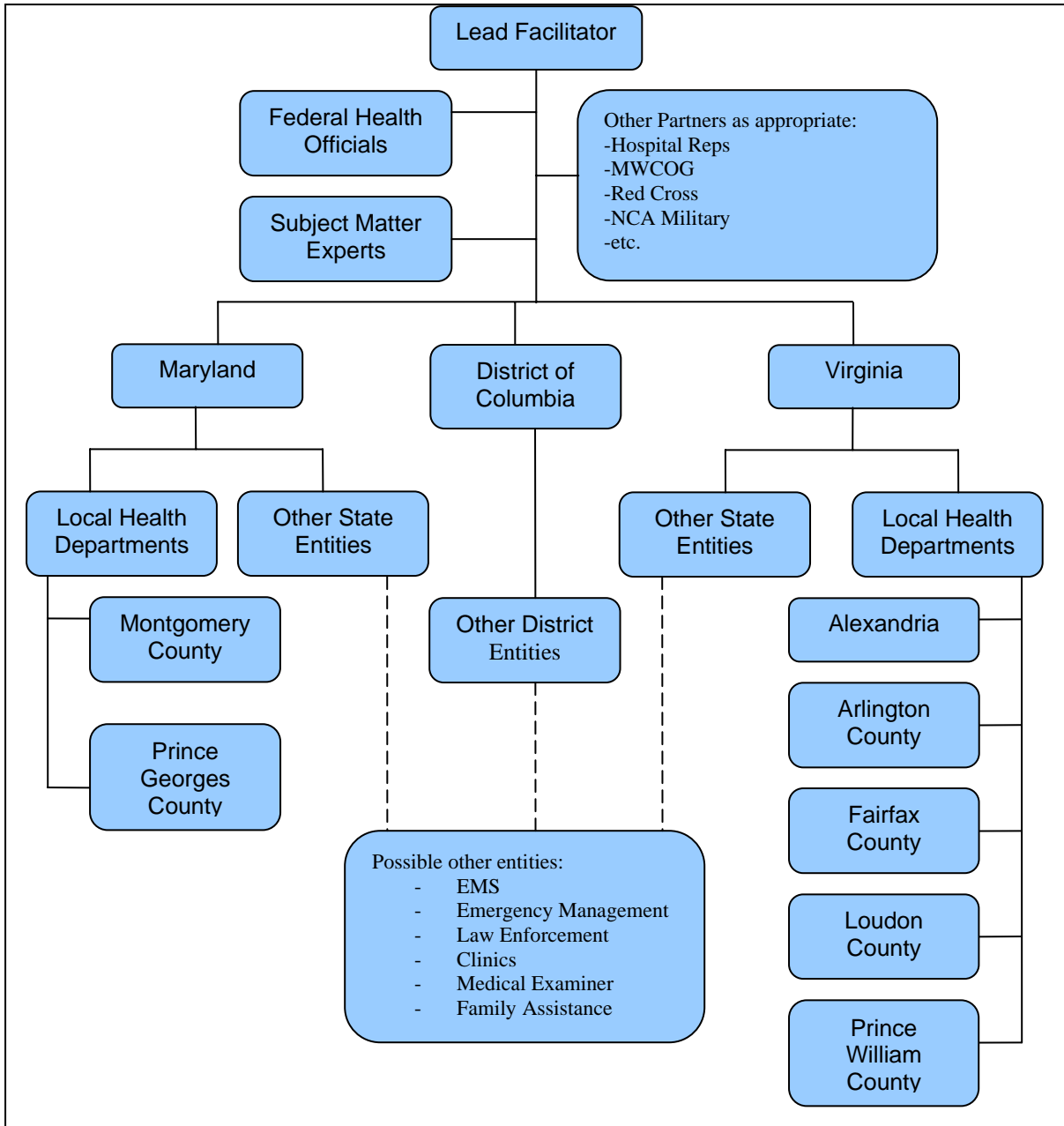
Participation:

The standing members of the HIG shall include the Lead Health Officials from the District of Columbia, Maryland, and Virginia or their designee, local health officers from each of the local jurisdictions who are members of the Metropolitan Washington Council of Governments or their designees, and other partners to be invited by the lead state/district health official instigating the call which may include but is not limited to the following.

- Care providers (hospitals, etc.)
- Federal health officials
- Subject matter experts
- Hospital representatives
- EMS representatives

Figure 2 is a graphical representation of participation in a HIG conference call. The “Lead Facilitator” is a senior health official of the state/district convening the call. To keep the size of the call manageable, some participants will be representative of a group of interested parties. All participants will be responsible for continuing the flow of information to and from their colleagues who do not participate in the call. The actual participation will vary to meet the needs of different situations. Following a conference call, information may be made available via e-mail, posted on a secure website, or included in incident tracking.

Figure 2: Sample Call Participation



Activation of the HIG:

Upon recognizing the need for the HIG, a local public health department or other entity will contact their state/district lead health official to request activation. Federal facilities will be considered an entity within the state where they are located. The state/district lead health official will consider the need for the HIG and, if required, will schedule the conference call and notify the participants. The requesting state/district lead health official will include in the activation notification the following

- Primary objective for the call list of participants
- Agenda
- Information/items require to be prepared for the call
- Time and call in information

Facilitation of the call

The lead state/district health official requesting the call will be the lead facilitator, and will control all discussion. An agenda format is under development by the Bio-emergency Planners Committee and will include:

- Roll call
- Purpose of the activation
- Status of the incident
- Response actions taken
- Comment by Subject Matter Experts, Federal Health Officials and other partners
- Objectives/strategies for the next response period
- Resources required/available
- Other business
- Scheduling of next call if required

4. Components of the Health Care Community

The health care community is varied and diverse. Broadly speaking, it includes private physicians, hospitals and community clinics, public health officials, behavioral health professionals, emergency medical services, hospices, and medical examiners. Each group brings to the crisis situation its own strengths and skills, professional training, priorities, functions and concerns.

4.1 Private Practitioners

The private medical community has been a very willing and engaged partner throughout the NCR. In fact, an astute clinician is the most likely person to notify public health of an unusual occurrence. For the purpose of this paper, it is assumed that nurses (e.g., RNs, LPNs, etc.) and physician assistants (i.e., PAs) are working under the direction of a physician, a clinic, a public

health department or a hospital; policies developed by such organizations will apply to their practice at this time. However, the essence of this section also applies to advanced practice nurses (e.g., nurse-midwives, etc.) who are in more independent practice.

Routine Public Health Reporting

State law mandates that communicable disease be reported to the Health Department. This system has been in effect for over 100 years and has served to alert the public health system of new threats. The first alert for a biological attack will most likely come from an astute clinician reporting via the public health system.

Hospitals

In order to practice in a particular hospital, physicians must be granted privileges to perform designated procedures or clinical activities within the hospital. Hospital by-laws require that medical staff participate in education, emergency drills, and peer review activities. All of the NCR hospitals have developed specific plans for methods of communication and roles and responsibilities associated with emergency situations.

Although the entire medical staff is required to engage in continuing education and is subject to peer review, a relatively small percentage of the body actually participates in "disaster drills" or disaster training. In general, hospital-based physicians such as emergency physicians, specialists in intensive care, trauma surgeons, anesthesiologists and pathologists, radiologists, pulmonologists and infectious disease specialists participate at a higher rate than non-hospital based physicians due to conflicting hours and patient demands. According to the Joint Commission on Hospital Accreditation (JCAHO), medical staffs are now required to have processes for disaster credentialing/privileging of non-medical staff physicians; however these plans have not been fully tested in many hospitals.

Most community hospitals do not employ their medical staffs, and few of the employed physician leaders have either true authority over their peers or training in incident command. So hospital command and control clinical responsibility issues remain, especially regarding obligations to treat infected, contaminated or criminal/terrorist-suspect patients. Educating community-based clinicians about hospital disaster plans, (e.g. decontamination, lock-down, quarantine procedures) also remains as an ongoing area of concern.

Safe and Rapid Discharge

The most important role that private medical practitioners can play during a surge event is the discharge of patients who are not critically ill. Such discharges will not only free up potentially needed bed space, but may ultimately free up nurses and allied health professionals to respond to disaster care demands.

Medical Societies

Many, but not all physicians are members of their local medical society. Public health representatives have made presentations both at the State and local societies to assure understanding of the local plans. These societies have helped public health departments develop methods of communicating with the private medical community, such as a "blast fax" system, a pager system and a call system.

Direct Mail

Many physicians have been reached by direct mail to assure that they are familiar with mechanisms of communication and the system's expectations. However, we still face a challenge in reaching many physicians in a timely manner, depending on the jurisdiction where they work/live and whether they have signed on to notification systems. Also, public health officials throughout the region have introduced communication plans that are still in various stages of development.

HMOs/Clinics

Although large well-organized HMOs have developed and exercised plans with their clinicians, smaller, poorly funded clinics targeted to our most vulnerable population lack the resources, funding and time to develop or exercise emergency plans. A great deal of work is needed to reach this segment of our medical community.

Other Policy Needs

There is a significant need to establish a "NCR-specific policy" on the following issues associated with the private practice of medicine:

- Liability: malpractice, out-patient injury (e.g., vaccine), liability, physician and staff injury/disability compensation (for volunteers vs. employees and for those at a government site vs. those serving in a clinic/office/hospital)
- Credentialing and privileging: allowing practitioners to practice in:
 - Other healthcare facilities within the same jurisdiction
 - An entire state
 - The entire NCR
- Disaster compensation: for services and supplies, damage to office or clinic facilities (FEMA vs. local/state public health department)
- Roles of and command/organization structure for Medical Reserve Corps vs. spontaneous physician volunteers (reporting and supervising relationships between physicians and nurses, and other allied health and public health professionals)
- Relationships between physicians and community partners (e.g., Red Cross, CERT, etc.)

4.2 Health Care Facilities

4.2.1 Hospitals

In a major event, the vast majority of patients are treated in the hospital setting. The main priorities of the hospitals, in this situation, are to

- Ensure security of the hospital and protection of the healthcare facility, personnel and existing patient population from the effects of the incident and recognize the potential for a secondary incident.
- Provide an adequate level of needed Personal Protective Equipment (PPE) to ensure the safety of health care workers and hospital staff.
- Expand triage and inpatient surge capability.

- Provide the highest level of healthcare commensurate with saving the maximum number of lives while protecting the health and safety of the public, disaster responders, and recovery workers.
- Protect valuable resources while maintaining the hospital critical infrastructure.
- Ensure the proper tracking and identification of patients during initial treatment, hospitalization, inter-facility transfer and/or final disposition.
- Contain or control the spread of illness and contamination through prophylaxis and isolation capability
- Coordinate with governmental agencies for information and preservation of evidence.
- Facilitate recovery of individuals, families, staff and the functional integrity of the hospital.

Services to Be Provided

Each hospital is planning to accommodate at least minimal numbers of all types of patients. One NCR estimate is that of 100 patients, 60 will be minimally afflicted, 30 will be moderately to severely afflicted and 10 will be seriously afflicted. It is difficult to predict exactly which type of mass casualty incident might occur in the NCR; therefore, all hazards including weather related, transportation catastrophes, wildfires, land slides, dam failures, biological, chemical, explosive, nuclear, and radioactive events are considered in hospital surge planning. Also, hospitals that normally do not accommodate burn or severe trauma patients have considered that they may have to keep these patients for longer than desired due to the queuing of patients for burn or trauma centers. Hospital types in the NCR range from general acute care, Level 1 trauma centers, psychiatric, rehabilitation, and burn centers. All types of hospital services may be required in a crisis, regardless of a hospital's main workload. Therefore, hospitals are planning to stock surge capacity to the degrees described above.

4.2.2 Hospice

Hospice staff and volunteers can provide much-needed services to patients and their families in a major emergency. Their specialty is palliative care, in addition to grief and counseling in a variety of settings. Their services in the case of medical surge can include

- Palliative medical and nursing care to hospital and homebound patients in end stage disease (especially important if the hospitals are overwhelmed, if there are large numbers of patients that cannot be saved, or if a quarantine is instituted)
- Telephone consultation and advice
- Grief counseling to families and others directly affected by the event (for each injured or dead person, it is estimated that 2.9 family members will need services)

The Hospice model for surge demand planning is being developed and will be articulated further in the 2006 plan, possibly including pre-event training.

4.2.3 Community Services

The **community** must also expect to provide support and augment the local healthcare system for a minimum of 72 hours following an event. Community support will include but not be limited to volunteer corps, auxiliary facilities for the provision of shelter and health care, transportation, security, food, water, electricity, supplemental supplies and equipment prior to the arrival of federal resources. Each local social service agency and/or public health department has assessed the community's support capabilities and will serve to coordinate community capacity as the incident progresses.

4.2.4 Surge Capacity

A major concern for health care facilities is the issue of **surge capacity and capability**. Planning for a sudden increase in demand for in-patient care is based upon the Health Resources Service Administration (HRSA) established guideline for any given region to be prepared to accommodate *500 acutely ill or injured patients per million population*. For the NCR, this means more than 2,500 beds.

Provision of specialty care (i.e. trauma, burn, pediatric, geriatric) must be considered in the context of an all-hazards approach to disaster response. Therefore, surge capacity must be accompanied by surge capability, ensuring the appropriate management of all variety of patient needs.

Surge Beds

Beds are defined in various ways, according to whether they are licensed, staffed, fully equipped, etc. In some parts of the region, hospitals routinely operate above licensed capacity, while in other parts they operate below licensed capacity. Therefore, for practical purposes, the term **operational bed** is used in this document, meaning a bed that is staffed, equipped and fully functional. The NCR has nearly 8,000 operational beds.

Jurisdiction	Number of Operational Beds
Maryland—Montgomery and Prince George's Counties	2,226
Washington, DC	2,904
Virginia—Arlington, Fairfax, Loudoun, Prince William Counties	2,700
TOTAL*	7,830

* based on 2004 use of facilities

The definition of surge beds is problematic, in that hospital capabilities may vary from med-surge to psychiatric and rehabilitation to burn care. Thus, not all hospitals have the same patient care capability or number of beds. For example, in the plans for adding surge beds under the Urban Area Security Initiative (UASI), about \$6,000 was allotted for each surge bed to be added with the minimum definition of a bed being a cot with an IV stand and fluids and with an equipment list provided to the hospitals so they can select the appropriate equipment items for augmenting their beds according to their individual hospital's specific needs. Using this

definition, the funding from the UASI grant will provide 444 surge beds in the region by May 31, 2005.

The Federal definition of surge beds is beds available above and beyond those normally used; Federal requirements call for 500 surge beds per million population. For planning purposes, the region's total population, including visitors, is approximately 4.5 million, necessitating at least 2,500 surge beds. Using this definition, the NCR will have only 444 surge beds plus a triage capability of 1,500 (500 per tent per 24 hours for 3 tents) in DC.

We estimate that the NCR could probably surge to an additional 2,349 beds (i.e., 30% of the normal operational beds.) by taking such measures as discharging patients early, canceling elective surgery and increasing staffing levels.

In addition, the District of Columbia has 3 temporary tent facilities for triage. They are fully equipped with litter stands, heat, etc. and can provide triage for 500 patients per day.

After careful analysis we have not included military beds within the NCR. In the event of an emergency situation the military bases would be closed to outside access, and military personnel may be deployed to support other needs both in and out of the NCR region.

The medical community will strive to expand operating beds by 30%, depending on the nature of the incident. **However, freeing up actual beds is only the beginning— specialty beds, especially ICU beds, have been identified as a serious deficit. More challenging are the pharmaceuticals, medical supplies, equipment and staff to support the general and specific beds.**

In the case of the spread of a communicable disease, measures will be taken to isolate the ill and quarantine the exposed. In some events, hospitals will institute pre-admissions processes as a way of disease control. All NCR hospitals have disease control plans in place and well exercised as recently as the emergence of SARS within the United States.

In case of a chemical attack, the public safety community has established decontamination processes both in the field and at the Emergency Departments, to limit “off-gassing” exposures to populations at risk. (Off-gassing refers to the gas that is given off via the clothing and skin of someone who is contaminated; this gas can affect others nearby.)

In case of massive injury, each hospital, in coordination with the jurisdictional EMS system (public safety and private sector), has developed detailed protocols for **Planned Systematic Modification of Patient Care Standards**. The College of Emergency Medicine Physicians has thoroughly researched the concept of standard practice modification associated with an event and has developed emergency standards of care appropriate to the type of event and the number of affected people. This function is directed via the Emergency Physicians in concert with the EMS system.

The basic outline of the plan is as follows:

- Surge bed identification matrix
 - 10% of staffed beds from expedited discharge
 - 10% of staffed beds from cancellation of elective surgeries and other elective admissions
 - 10% of licensed beds available by identification of available “flat-space” treatment area (either licensed beds not currently staffed, or other unlicensed treatment areas within the hospital)
- Surge demand support requirements
 - Medical equipment needs
 - Medical supply needs
 - Pharmaceutical support needs
- Surge staffing resources
 - Use of existing staff, altering shift lengths and patient care ratios
 - Mobilization of regional staff based on existing MOU
 - Mobilization of Medical Reserve Corps (MRC) staff
 - Integration of federally deployed medical teams

The NCR will have to

- 1) agree on definition of surge bed or bed types
- 2) inventory current capacity
- 3) apply current best practices to estimate need
- 4) perform a gap analysis and
- 5) plan for narrowing the gap

4.2.5 Surge Capability

Surge capability is the ability of the healthcare system to respond to very unusual or specialized medical needs. Surge capability requirements include both

- Specialized medical and health services not normally available at the particular location, such as a heavy influx of burn patients or pediatric patients, and
- Patient problems, such as symptoms of SARS that require special intervention to protect medical providers, other patients and the integrity of the medical care facility.

Addressing capability issues requires extensive coordination among public and private health, emergency management and others. Each jurisdiction has a standing committee or coordinating council that coordinates when difficult issues arise. Each health department, in partnership with its medical communities, has identified specialists to be deployed. These specialists include clinicians specializing in emergency medicine, infectious disease, pulmonary medicine, psychiatry, pathology, microbiology, trauma surgery, general, orthopedics, barometrics and other specialties. Smallpox teams have been established in all the local health departments in conjunction with their medical partners.

Critical specialists in laboratory medicine, infection control and respiratory therapy have been trained and are on call to respond to events. Behavioral health specialists have been enlisted, including social workers, crisis counselors, physiotherapists, hospice and members of the faith community.

4.3 Public Health

Public health is a government function, operating in every jurisdiction, to provide planning, assessment, direct medical care where none other exists, and assurance that appropriate health care services are being provided.

4.3.1 Public Health Departments

Departments are staffed to respond to a relatively constant volume of public health needs with seasonal or demographic variations causing short term spikes in service demand. Local and state public health services are limited in their ability to expand to massive surge demands anticipated by a large biological incident. The plan provides structure and systems to unify nine local health departments, three state health departments and the office of the Capitol Hill physician within the NCR. There exist very well-defined local plans, which have been incorporated into the State plans (which are in turn approved by the Centers for Disease Control and Prevention) and reviewed by the NCR senior policy group. Roles and responsibilities have been articulated and tested and are incorporated into a constant improvement process via the COG Health Officials' committee's subcommittee of Bio-Emergency planners. The local plans are tied to the jurisdictions' hospital plans which in turn are tied to the public safety plans for the specific jurisdiction. Each Department of Health has developed a detailed plan for the deployment of volunteers. In some cases, the State has assumed the management, organization, and training of a state volunteer organization.

4.3.2 Public Health Priorities

In a major event, public health response priorities are five-fold:

- To protect the functioning ability of hospitals and all types of responders
- To protect health of the community
- To ensure the best possible level of care, saving as many lives as possible while using a systematic modification of care approach
- To contain or control illness that is causing problems through
 - Prophylaxis
 - Isolation of the communicable ill
 - Quarantine of exposed community members
- To ensure the highest level of mental health by maintaining order and avoiding panic through use of
 - Pre-messaging
 - Prepared statements
 - Role clarification
 - Call-in centers
 - Walk-in centers, if needed
 - Virtual joint information centers
 - Coordination and training of volunteers
 - Adoption of shelter-in-place concepts

- o Encouraging self sufficiency of a well prepared populous

4.3.3 Public Health System Response

The Governors of Maryland and Virginia, and the Mayor of the City of Washington, are the **Emergency Response Managers** for their jurisdictions.

Each local Health Department in the NCR has detailed plans that have been developed in concert with the State Departments of Health. They include roles and responsibilities of staff, coordination with hospitals and other healthcare providers, vaccination protocols for community-wide interventions, first responder protocols and procedures, chain of command and incident command roles. The plans are specific to locations and event management. The plans contain numerous details that are revised as the result of exercises and tabletop events.

The investigation and control of communicable disease outbreaks, whether natural or man-made, are assigned by statute to the State Health Commissioner (in Maryland and Virginia) and the Director of Public Health (in Washington, D.C.). Operating in concert with other state and federal agencies, and through a collection of local health departments overseen by local health directors (in Maryland and Virginia), these **State Health Officials** direct the response to public health emergencies, and coordinate public health practice across the region. Some decisions are made locally, some at the state level, but most decisions are cooperatively by the state and local officials.

It is anticipated that health response coordination with federal agencies and others will take place through the State Emergency Management Agencies, in accordance with the Federal Emergency Management Agency's emergency operations plans and their established linkages with various levels of government. Even when the initial assessment suggests **an intrastate event**, the initiating Health Official will use the **State EOC** (Emergency Operations Center) to communicate with other appropriate officials; these communications will follow preset policy and procedure.

4.3.4 Public Health Capacity

The broad definition of public health includes the traditional, legally mandated public health system that includes licensing, regulation, provision of services, epidemiology, health planning, maternal child health, environmental health, wells and septic, rodent control, prevention, and advocacy.

However, the community is a key component of the community health system. Partnerships among public health agencies, private providers, and health care facilities are the heart of a public health system. Local and state agencies are joined together via a public health network at the Federal level by the Centers for Disease Control and Prevention, and various bureaus of the Department of Health and Human Services, such as Maternal Child Health, Community Action grants, etc.

Public Health surge capacity is defined as “the overall capacity of the public health system to increase capacity not only for patient care, but for epidemiologic investigation, risk communication, mass prophylaxis or vaccination, mass fatality management, and other activities”.

Public Health Departments are woefully understaffed at the local, state and federal levels. In a landmark publication by the Institute of Medicine, entitled the “Future of Public Health,” a lack of funding was clearly identified as the major cause of the crisis in Public Health. In order to protect the public health, the scope and roles and responsibilities were changed. Delivery of direct medical services by public health agencies was replaced with *assurance* of medical services. Public health department clinics were closed, roles and responsibilities were significantly changed, and focus shifted to a “community wide” practice rather than the individual practice of medicine. Combined with the significant nursing shortage, clinical practice became focused on prevention, education, case management, assessment, and the formation of health coalitions that were devoted to improving the health of the whole community.

Most health departments maintain clinical capability and capacity in immunization, sexually transmitted disease, tuberculosis control and disease control. The expertise of public health professionals remains in epidemiology, investigation, regulation, collaboration, planning, education and communicable disease and preventive medicine. Roles and responsibilities have been defined by the National Association of City/County Health Officials and the Association of State and Territorial Health Directors. Core competencies have been developed by academic institutions such as Columbia University and others, and training programs are in place throughout the region. Health Departments with bargaining units have modified labor contracts to accommodate newly defined emergency duties. There is a great need to strengthen the capacity of the public health system through:

- Training via computer and video or live broadcast methodologies
- Automated systems of tracking patients in a case management system
- Automated call-in centers
- Emergency public health vehicles integrated into the IMS
- NCR small-scale table-top training
- Recruitment and retention strategies for public health professionals
- Recruitment of epidemiologists, sanitarians, nurses, laboratory scientists, case managers, support staff, administrators, and physicians

One of the major barriers to increased capacity and capabilities is the requirement in NCR UASI grants that funds cannot be used to strengthen the system by the employment of public health professionals. While other critical responders can use funds to cover “call-back and overtime”, the public health system is not a 24-hour staffed system like law enforcement and Fire/Rescue. There is, in fact, no depth to call upon. Until funds are made available to strengthen public health departments, the capabilities and capacities will be limited to those activities described in this document.

Public health departments use the following strategies to assure emergency preparedness:

- STD , HIV, TB clinics are postponed

- Food services establishments are not inspected
- Nursing homes and assisted living facilities are not inspected
- Case management of pregnant women and children is placed on hold
- Assessment , intake, and management of vulnerable adults , children, and special needs population are postponed
- Planning is refocused
- Environmental monitoring of air, water, lead, etc. is refocused
- Epidemiology is focused on emergency trends only
- Routine activities associated with coalition building and community strengthening are postponed
- School health practices such as pregnancy prevention, immunization, assessment, asthma monitors , clinical management of special needs children, medication management and family interventions are postponed or limited
- Administrative function such as fiscal management, budget development, grant writing, and Medicaid billing are placed on hold

Health departments are asked to quantify what the outcome of reprioritizing traditional public health activities will do to a community. It is impossible to state the consequences beforehand, for they will become apparent only over time.

4.4 Emergency Medical Services (EMS)

Each local jurisdiction is responsible for the dispatch of appropriate EMS units to the scene of incidents. Mutual aid agreements exist between jurisdictions for response across boundaries to assist a jurisdiction affected by a mass casualty incident. The National Incident Management System (NIMS) is the model by which command of those units is structured. As dictated by the size of the incident and the number of patients involved, the mutual aid could be in the form of individual units, a single resource or in task forces or strike teams.

4.4.1 Scene Management

Assessment

Upon arrival on the scene, the first units will establish a command structure, and then assess the scene for safety and the following:

- Type of incident (i.e. explosion, chemical, radiological, etc.)
- Involvement of contaminants
- Number of patients involved
- Potential for walk-ins

Communication and alerting of hospitals

Notification of the incident and the information listed above are communicated to the potentially affected hospitals as soon as possible. This may be in the form of a call through

the dispatch center to one of the NCR hospital communication/coordination centers listed below to provide the early notification.

- District Of Columbia – Emergency Communication and Information Center (ECIC) at Children’s National Medical Center
- Maryland – Emergency Medical Resource Center (EMRC) at the Maryland Institute for Emergency Medical Services Systems
- Northern Virginia - RHCC (MEDCOMM)

These communication/coordination centers will notify the area hospitals of the incident and begin to assess the availability of beds/resources. As per IMS practices, a Medical Communication Coordinator may be designated to coordinate ongoing communication with hospitals.

Triage and Flow of Patients

Patients are triaged as close to the scene as possible and are categorized into 4 categories

- Red (Priority 1) – Immediate
- Yellow (Priority 2) – Delayed
- Green (Priority 3) – Minor
- Black (Priority 4) Deceased or Impending

The patients are tagged with colored ribbons and the Washington Metro Area COG Disaster Tag (triage tag) then removed from the incident site. Immediate treatment is provided and patients are prepared for transport. Patients are then loaded into a transport vehicle and transported to hospitals as assigned by the Treatment Dispatch Manager. (*Note: Washington, DC currently uses the categorizations of “Major” and “Minor” when counting available emergency department capacity. All others categorize emergency department availability consistent with the categories listed above.*)

Decontamination

All contaminated patients encountered by EMS will be decontaminated prior to transport. Local and mutual aid Haz-Mat teams will coordinate the decontamination process.

4.4.2 Patient Care Supplies

- Mass Casualty Stocks & Vehicles

Each jurisdiction in the NCR has vehicles stocked with additional supplies for response to mass casualty events. They are categorized by the estimated number of patients they are equipped to supply. A resource inventory is required to determine the adequacy of those resources.

- Ambulance Buses

It is estimated that there are inadequate traditional ambulances to transport a sudden surge of patients. Alternative means such as public mass transit and school buses are used to transport multiple ambulatory patients, but vehicles configured to transport multiple non-ambulatory patients are not immediately available in all areas of the region. Military resources in the region are not available for immediate response. An assessment of these resources and their adequacy is required.

- **Pharmaceutical Stockpiles**
Many jurisdictions have caches of medications for the immediate treatment of patients and prophylaxis of their personnel and families. Other resources such as Metro Medical Response Systems (MMRS) and the CDC Chempack and Strategic National Stockpile are available. These resources need to be cataloged and assessed for adequacy and response times.

4.4.3 Coordination of Definitive Care Resources

Patient care protocols throughout the region require that individual patients be transported to the closest appropriate hospital. More specifics as to the definition of “appropriate” can be found in those protocols and are dictated by the respective Medical Directors. Questions on individual patients are directed to on-line medical directors.

- **Routine Hospital Status Board Use**
Availability of resources to treat patients plays a role in the definition of “appropriate”. Hospital diversion policies assist with the assessment of availability. Each state maintains the availability of resources and communicates that to the EMS providers through several means. These “Status Boards” also provide a means to assess the seasonal surge and assist in the surveillance for unexpected trends. The coordination of the 3 state status boards will be accomplished through the impending development and implementation of the UASI NCR Mass Casualty Surge Initiative. Information from the status board will be made available to approved members of the NCR healthcare and public safety communities.
- **Alert, Notification, And Assessment of Available Beds/Resources.**
In the event of an incident or unusual occurrence, the hospital communication/coordination centers assist the pre-hospital and public health providers by notifying hospitals and assessing resources in their respective jurisdictions. In the event of a region-wide incident or multiple local incidents, the potential to coordinate resource availability exists, but requires definition through standard procedures and exercising. Data tools are used by each center and need to be interfaced to facilitate sharing.
- **Coordination of Transports**
The intended destination of patients from a mass casualty incident is usually determined at the scene by the treatment dispatch manager with input from the hospitals via the Medical Communication Coordinator and a physician Medical Director. For region-wide incident or multiple local incidents that destination determination may need to be moved to one or more of the hospital communication/coordination centers to provide for a more global distribution of patients.

4.4.4 Alternative Definitive Care Resources

This plan suggests that non-traditional healthcare facilities may be accessed to provide care for affected patients. Medical Directors, in collaboration with senior EMS officials and public

health officials, can direct that patients be transported from the scene of an incident to those non-traditional facilities as they become available.

4.4.5 Support of Health Care System

In the case of regional biological outbreaks or other incidents in which the patients are not presenting for treatment at a specific site, EMS may be called upon to assist in the response. Public safety based and commercial EMS resources may be asked to transfer patients between facilities, transport the routine patients to non-traditional care facilities, assist in the homecare of isolated or quarantined patients, or transport supplies or other resources to facilities in need. Any action outside of current protocol, policy or standard procedure would be at the request of the public health officials and agreed upon by local senior EMS officials, medical directors and certifying/licensing agencies.

4.4.6 Documentation

The care of individual patients is documented on their patient care record approved by the state EMS agencies. Copies of the reports are provided to the hospitals when patient care is transferred. The records are maintained at each jurisdiction with at least aggregate information being provided to the state lead EMS agencies. The aggregate records provide a resource for planning, protocol development, and disease surveillance.

During mass casualty events such in-depth documentation may become obtrusive to patient care. Care of the individual patient is then documented in short notes on the triage tags. The MWCOG has adopted the Washington Metro Area COG Disaster Tag (triage tag) as the MWCOG approved tag. Maryland and the District of Columbia all use the same bar-coded triage tag to reduce confusion in times of stress. The individual patient care record may be completed if time allows during transport.

Documentation of where patients are transferred is completed on NIMS compliant forms which could be collated to track patients later in an incident. Efforts are underway to improve the efficiency of the patient tracking process so that real-time electronic tracking is possible. This will assist in the allocation of resources and reunification of families or groups of people.

4.5 Behavioral Health Services (This section is still under development)

Behavioral health of the NCR community is of the highest priority. In a deliberate, terrorist event, the success of the enemy's attack is based on the expectation of mass fear. Mass fear is associated with any event that includes the reality or even a threat of mass casualties. Best practices have been incorporated in local, state and regional plans to both *treat persons* suffering from "terrorism" and also to *strengthen the community*. Reflecting the high priority of behavioral health concerns, the NCR functional organization chart designates a senior behavioral health authority in each jurisdiction.

Behavioral health needs in an emergency are very different from the medical model used to treat mentally ill patients. In an emergency, the public responds with normal reactions to an abnormal situation, and large numbers of people need help remembering their coping skills. There will be some increase in behavioral health treatment, especially for Post Traumatic Stress Disorder (PTSD) and substance abuse.

Several strategies are employed in the NCR to address the behavioral health of our community.

- Pre-messaging. This concept—of preparing messages for the public in advance of any major event—is a combined effort among behavioral health, public health, and public information professionals. These messages articulate types of threats, appropriate responses, and coping and resiliency strategies. Messages will be delivered via public service announcements and direct mail or they will be incorporated into statements of public officials.
- Appearances of elected officials and senior health officials on radio, TV and in articles in the print media have been designed to strengthen the population’s capacity to endure and survive an event.
- These efforts have been customized to reflect the multi-racial and ethnic composition of the NCR.
- “Just-in-time Messages” have been prepared ahead of time to fit the threats thought to be possible, i.e. the nature of anthrax, earthquakes, etc. They were developed by the Public Health community in conjunction with the PIO committee and will be used in the event of an incident.
- A series of triage systems has been developed to further address the public’s needs for information:
 - a recorded message updated routinely for the public to call for the latest information,
 - a call-in center to provide individual counseling, and
 - walk-in centers for evaluation. These have been developed and tested and will be deployed as needed.
- The various members of the behavioral health treatment and prevention community have been most active in addressing anti-terror strategies. A region-wide behavioral health Concept of Operations will be developed to link to Edition II of this paper.

4.6 Medical Examiner

In caring for the dead, each state will follow its own Mass Fatality Plan. The Chief Medical Examiners (MEs) in the three jurisdictions have collaborated to assure proper identification, forensic procedures, preparation of bodies for burial or cremation, storage of bodies, and inter-state transport according to protocols. The Medical Examiners are developing Mutual Aid documents that will provide for regional assistance. The MEs have articulated state-specific plans that will be followed once the aid has been requested. The state in which the death occurs will dictate the ME authority and the plan to be followed for proper disposition of bodies. The Federal Coordinating Officer will facilitate with federal resources through the EOCs. [pending concurrence of VA and MD MEs]

5 Threat Scenarios—Preparation for a Regional Emergency

Threats come in many forms—both human-generated and naturally occurring, with either sudden or gradual onset, affecting a small isolated population or the entire region. We have focused our attention on an all-hazards approach. In addition, planning considers the possibility of multiple events in multiple locations.

In the case of sudden massive onset—as with an earthquake or major explosion—mass casualties occur immediately and the problem is quickly apparent; the response system moves rapidly into gear at a relatively high level; and additional resources may be needed in the first 24 hours. However, some events may begin very gradually and not be identified for some time, as in the case of an emerging disease. In that instance, initial responses will develop slowly and in multiple locations.

At the Federal level, planners in the Department of Homeland Security have developed 15 possible threat scenarios of various types to aid groups in planning and testing their management systems. These scenarios cover such events as a biological attack from plague, a chemical attack using nerve agents, and major disasters like hurricanes or earthquakes. While they don't cover every possible threat, they help us to prepare for a variety of incidents and are useful surrogates for the all-hazards approach that the COG group has taken.

The Threat Scenarios are addressed in State and jurisdictional plans; they appear in the appendices. This plan is applicable to all 15 scenarios.

6 Relationship to Other Plans

This NCR Surge plan does not stand alone. It has direct and indirect relationships with many other response plans, in particular:

1. NIMS (National Incident Management System)
2. ***Public Health Emergency Response Guide for State, Local, and Tribal Public Health Directors*** (CDC)
3. Federal Concept of Operations Plan
4. FEMA: NCR Weapons of Mass Destruction Response Plan
5. Washington D.C. Surge Response Plan
6. Maryland Surge Response plan
7. Northern Virginia Surge Capacity Plan
8. *Medical Surge Capacity and Capability* (Federal DHHS)

This document is limited to the key functions of—and collaborative relationships among—the medical and behavioral health communities, both public and private. However, the medical and behavioral health communities do not operate in a vacuum—or independently of other sectors.

Other groups are responsible for the following important related functions:

1. Law Enforcement
 - Quarantine and isolation
 - Protection for medical workers
 - Forensic epidemiology
 - Crowd control
 - Protection of the Strategic National Stockpile assets
 - Maintenance of order at distribution and/or vaccination locations
 - Other major protection and enforcement issues associated with medical surge
 - Establishment of perimeter control
 - Establishment of health care facility security plans
2. Transportation
 - Management of transportation systems in harmony with quarantine and isolation
 - Deployment of systems in support of the Strategic National Stockpile (SNS) and medical personnel
 - Establishment of transportation systems in support of isolation and quarantine supply and support procedures
3. Public Information
 - Collaboration with health officials, hospitals and public safety via the PIO committee
 - Development of pre-messaging strategies
 - Establishment of call-in centers
 - Coordination of messages throughout the region
4. Fire /Rescue
 - Establishment of scene: recognition, mitigation and restoration activities
 - Triage
 - Coordination of rescue
 - Hazmat protocols
 - Decontamination
5. Emergency Managers
 - Establishment of Emergency Operations Centers
 - Establishment and maintenance of Incident Command Structure
 - Coordination with State EOCs
6. Others
 - Legal and regulatory decisions
 - Financial issues

Tiered System

The medical surge planning team, in recognition of recent federal guidance, has moved from matrices to a tier management system. We recommend that the NCR coordinating bodies review

this recent guidance and determine whether this is a useful coordinating tool—or suggest other coordination formats.

7 Legal Framework (This section is still under development)

Background

The Attorneys General (AGs) of each State have authored recently-enacted legislation that provides guidance to the Healthcare and Public Health communities. Specific guidance on all legal matters—including interpretations, refinements, clarification and general questions—should be directed to the respective Attorney General.

Several major legal issues are involved in Medical Surge:

Modification of Standards of Care

The American College of Emergency Physicians has reviewed these issues, and has issued guidance for practitioners faced with crisis medical management. Additional information can be obtained from respective medical societies, hospital legal counsel offices, and Public Health AGs.

Quarantine and Isolation

These public health powers are codified in the laws of the three states. The Commonwealth of Virginia, the District of Columbia, and the State of Maryland have articulated policies, procedures, and detailed plans incorporating the local jurisdiction plans governing these situations. These powers are utilized occasionally for the containment of contagious diseases such as tuberculosis.

Medical Liability

Guidance on medical liability continues to be studied and refined. In some cases “Good Samaritan Laws” can be employed. In some cases a practitioner may be acting as an “agent of Public Health” thus being governed by Public Health State and local law.

If a person is performing duties as a registered volunteer of a government jurisdiction, local or state law will provide guidance.

If a person is performing duties as a member of a volunteer organization, the agency’s governing documents will provide guidance.

Emergency Powers Acts may be invoked by the Governors of Maryland and Virginia, and the Mayor of the District of Columbia for specific guidance in crisis situations.

For the purposes of NCR Medical, the states’ laws govern legal practice. Case law will, over time, bring more clarity to this subject; additional resources are available in the appendices.

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APPENDIX A

Hospice Capabilities

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Hospice Capabilities

Hospice provides expert, comprehensive palliative care to persons facing terminal illness and their families and loved ones. The 10 affiliate members of the Hospice Alliance serve the entire state of Maryland including the major population bases of Montgomery County, Anne Arundel County, Prince George's County, Baltimore City and Baltimore County. Capital Hospice serves the District of Columbia and all of Northern Virginia, including Stafford and Fauquier Counties.

Hospice staff travel the region to provide comprehensive care wherever the patients live: in homes, nursing homes, and assisted living facilities and in hospitals. The capacities of Hospice include:

- Medical care—especially palliative medicine, which seeks to ease symptoms and bring comfort—through physicians and nurse practitioners
- Nursing care through clinical managers and other registered nurses
- An evening and weekend nurse triage program where trained clinical staff are available by phone to assist patients and their families
- Counseling and support services, including grief counseling through chaplains, social workers and community counselors
- Nursing aide services through licensed practical nurses and certified nursing assistants or home health aides
- A variety of related services through more than 1,200 non-medical volunteers
- A 15-bed acute care hospital unit in Arlington County devoted to hospice care
- Contracts with a network of pharmaceutical and home medical equipment suppliers

Today Capital Hospice is caring for 630 patients, while the other members of the Alliance together care for another 600. More than 6,000 patients were in the care of the Hospice Alliance in all of 2004, and close to 18,000 family members received support and grief counseling.

The Metropolitan Washington area and the Baltimore/Washington corridor are vulnerable to any number of potential public health disasters—whether a massive flu epidemic, hazardous chemical spill, or attack with a biological or nuclear weapon of mass destruction. In such an event, when facilities in the regional healthcare system would be overwhelmed with large numbers of sick and injured, dying and near dying, the expertise of Capital Hospice and its affiliate hospices could be put to use caring for affected individuals in the home setting. Their services could include direct medical and nursing care, telephone consultation and advice, and grief counseling and support for others affected by the tragedy.

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APPENDIX B

RECP #8

(Regional Emergency Coordination Plan #8)

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Regional Emergency Support Function #8 Health, Mental Health, and Medical Services

Regional Coordinating Organization

Metropolitan Washington Council of Governments

Local Coordinating Jurisdictions

Alexandria
Arlington County
Bowie
College Park
District of Columbia
Fairfax
Fairfax County
Falls Church
Frederick County
Gaithersburg
Greenbelt
Loudoun County
Rockville
Montgomery County
Prince George's County
Prince William County
Takoma Park

District of Columbia Health, Mental Health, and Medical Services Organizations

District of Columbia Department of Health
DC Fire and EMS
DC Office of the Chief Medical Examiner
DC Office on Aging
DC Emergency Management Agency
DC Department of Mental Health
DC Health and Human Services
Metropolitan Police Department
D.C. Public Schools

Maryland Health, Mental Health, and Medical Services Organizations

Maryland Institute of Emergency Medical Services Systems
Maryland Department of Health and Mental Hygiene
Maryland Emergency Management Agency

Maryland State Police
Maryland Office of the Chief Medical Examiner
Maryland Local Health Departments
 Montgomery County Department of Health and Human Services
 Prince George's County Health Department
 Frederick County Health Department
County Public Schools

Virginia Health, Mental Health, and Medical Services Organizations

Community Services Boards in all jurisdictions
Virginia Department of Mental Health,
 Mental Retardation and Substance Abuse Services
Virginia Office of the Chief Medical Examiner
Virginia Department of Emergency Management
Virginia Department of Health
Northern Virginia Emergency Medical Services Council
Virginia State Police
Virginia Park Police
Virginia Local Health Departments
 Arlington County Health Department
 Fairfax County Health Department
 City of Alexandria Health Department
 Prince William County Health District
 Loudoun County Health Department
County Public Schools

Private-sector Coordinating Organizations

National Capital Region—Emergency Response (NCR–ER)
Greater Washington Board of Trade

Private-sector Health, Mental Health, and Medical Services Organizations

DC Hospital Association:
 Children's National Medical Center
 Columbia Hospital for Women
 George Washington University Hospital
 Georgetown University Hospital
 Greater Southeast Community Hospital
 Hadley Memorial Hospital
 Howard University Hospital
 Malcolm Grow Medical Center
 National Naval Medical Center
 National Rehabilitation Hospital
 Providence Hospital
 The Psychiatric Institute of Washington
 Riverside Hospital
 Saint Elizabeth's Hospital—Department of Mental Health

Sibley Memorial Hospital
Veterans Affairs Medical Center
Walter Reed Army Medical Center
Washington Hospital Center
Maryland Hospital Association
Montgomery County Hospital Groups:
Washington Adventist Hospital
Holy Cross Hospital
Montgomery General Hospital
Suburban Hospital
Shady Grove Adventist Hospital
Prince George's County Hospital Groups:
Fort Washington Hospital Center
Prince George's Hospital Center
Greater Laurel Regional Hospital
Doctors Hospital
Southern Maryland Hospital
Virginia Hospital Association
American Psychological Association
American Psychiatric Association
American Public Health Association
American Medical Association
National Association of Social Workers
Mental Health Crisis Network (Metro Chapter NASW)
American Red Cross (National Capital Chapter)
Metropolitan Washington Public Health Assessment Center
State Pharmaceutical Associations
Specialty Nursing Associations
Academic Institutions and Boards of Education
Northern Virginia Emergency Response Coalition:
Regional Hospital Members:
Virginia Hospital Center—Arlington
Inova Alexandria Hospital
Inova Fair Oaks Hospital
Inova Mount Vernon Hospital
Inova Fairfax Hospital/Inova Fairfax Hospital for Children
Inova Emergency Care Center—Fairfax
Inova Emergency Care Center—Reston
Inova Healthplex—Springfield
HCA Reston Hospital
HCA Northern Virginia Community Hospital
Loudoun Hospital
Potomac Hospital
Prince William Hospital
DeWitt Army Hospital

Funeral Directors Associations
Clinical Pastoral Resources
Specialty Medical Societies
State Medical Societies
Local Medical Societies
Private Physicians
Managed Care Organizations

Federal Government Health, Mental Health, and Medical Services Organizations

U.S. Department of Health and Human Services
 Office of the Assistant Secretary for Public Health Emergency Preparedness
 Office of Public Health Preparedness
 National Institutes of Health
 Centers for Disease Control and Prevention
 Food and Drug Administration
 Office of Emergency Preparedness
Federal Emergency Management Agency
 Office of National Preparedness
Office of Homeland Security
Department of Defense
Executive Branch Medical Units
U.S. Capitol, Office of the Attending Physician
All federal police forces

I. Introduction

A. Purpose

The Regional Emergency Support Function (R-ESF) #8—Health, Mental Health, and Medical Services facilitates communication, cooperation, and coordination among local and state jurisdictions concerning regional health, mental health, and medical services issues and activities before, during, or after a regional incident or regional emergency.

B. Scope

R-ESF #8 is intended to focus on information regarding disruptions of health, mental health, and medical services with local and state impacts requiring inter-jurisdictional coordination. R-ESF #8 also coordinates necessary information to determine health, mental health, and medical needs across the region as the result of a regional incident or regional emergency. Coordination with R-ESF #1—Transportation and R-ESF #2—Communications Infrastructure, are critical to ensure effective delivery of services.

II. Policies

- A.** R-ESF #8 will not usurp or override the policies of any federal agency, state government, or local government or jurisdiction.
- B.** The Metropolitan Washington Council of Governments (COG) Health Officials Committee will facilitate coordination among member organizations to ensure that R-ESF #8 procedures are appropriately followed and are in concert with the stated missions and objectives of the RECP.
- C.** Essential Elements of Information (EIs) will be conveyed through the Regional Incident Communication and Coordination System (RICCS) as required by the incident.
- D.** R-ESF #8 will provide a liaison to R-ESF #5 as necessary.

III. Situation

A. Regional Emergency Condition

1. If an anomaly is noticed by the jurisdictions through their bio-surveillance systems, preventive actions can be undertaken, reducing the impact on the region.

2. The regional health, mental health, and medical community will experience disruptions in the delivery of routine services. Such an incident could be the result of natural disasters, technological events, or human causes (all hazards). Local health, mental health, and medical activities could be hampered by damaged facilities, equipment, infrastructure, disrupted communications, etc. Additionally, the regional incident or regional emergency could create a significant surge in demand for regional health, mental health, and medical resources.
3. A regional incident or regional emergency could produce a large concentration of specialized injuries, illness, mass casualties, fatalities, and other problems that could overwhelm the healthcare community within the region.
4. Critical and long-term patients in existing hospital or health care facilities may need immediate relocation from these facilities if they are damaged or inoperable.
5. If the regional incident or regional emergency lasts for several days or weeks, there could be a severe impact on health, mental health, and medical services capabilities. Contributing factors that must be considered include complications and issues regarding relocation, shelters, vector control, potable water, and wastewater and solid waste management.

B. Planning Assumptions

1. Planning partners will include public and private organizations.
2. The RECP will promote inter- and intra-jurisdictional cooperation and coordination while preserving the unique characteristics and operating procedures of each member jurisdiction.
3. The resources routinely available within the affected emergency area will be inadequate to clear casualties from the scene or treat them in nearby health care facilities. Two high priority areas, which will impact the delivery of healthcare services and necessary medications, are transportation and communication.
4. Medical re-supply will be needed throughout the emergency area, based on the requirements of the affected jurisdictions.
5. A terrorist release of WMD may lead to toxic water/air/land environments that threaten surviving populations and response personnel, including exposure to hazardous chemicals, biological agents, radiological substances, and contaminated water supplies and food products.
6. Central reporting of testing results, and management and dissemination of this information, is key to mitigating the response.

7. Assistance in maintaining the continuity of health, mental health, and medical services will be required, especially for citizens with long-term and ongoing health care needs. Health, mental health, and medical services will be financially impacted.
8. The stress, loss, and pain caused as a result of a regional incident or regional emergency may result in the region's mental health system becoming overwhelmed, producing urgent need for mental health crisis counseling for emergency victims, response personnel, their families, and the general public.
9. Any WMD incident will lead to a potentially large magnitude of health issues as well as require multi-jurisdictional and inter-agency coordination and entail addressing long-term psychological needs.
10. Delivery of multi-lingual messages, and the availability of personnel with multi-lingual skills, is critical due to diversity of the population throughout the region.
11. During an incident a large number of providers may themselves be affected and therefore unable to provide care to others.
12. A biological event may occur unannounced, only becoming apparent over time.
13. Horizontal and vertical communications will be necessary to ensure an effective response before, during, and after a regional incident or regional emergency.

IV. Concept of Coordination

A. General

1. Both major and minor regional incidents or regional emergencies involving health and mental health will be cause for convening R-ESF #8.
2. Local jurisdictions that participate in R-ESF #8 will coordinate and execute their respective health, mental health, and medical authorities and program responsibilities before, during, and after the regional incident or regional emergency.
3. The R-ESF #8 function will collect, analyze, synthesize, and disseminate information concerning regional health, mental health, and medical related issues, including disease surveillance, facilitated through RICCS as appropriate.

4. Requests for information regarding emergency regional health, mental health, and medical issues will be referred to the R-ESF #8 liaison for R-ESF #5 through the RICCS. The liaison will coordinate with the health, mental health, and medical services regional partners, including with R-ESF #6—Mass Care.
5. A regional approach to preparing for and managing a “shelter in place” decision is developed and pre-event distribution of information is implemented.

B. Organization

R-ESF #8 will operate under the leadership of the COG Health Officials Committee:

COG Health Officials Committee

District of Columbia Department of Health
Maryland Department of Health and Mental Hygiene
Virginia Department of Health
Arlington County Health Department
City of Alexandria Health Department
Fairfax County Health Department
Frederick County Health Department
Loudoun County Health Department
Montgomery County Department of Health and Human Services
Prince George’s County Health Department
Prince William County Health District

(Note: One or more federal agencies are regularly invited to attend.)

The mission of public health is to prevent disease and promote community-wide health. Local, state and federal public health officials are mandated to protect their respective jurisdictions *as a whole* from disease or injury. By contrast, private healthcare providers have a primary responsibility for the welfare of each *individual* patient. Although the public and private health sectors share several overlapping objectives, it is essential to recognize the distinctions in roles and responsibilities. Ideally, the various sectors of the healthcare community will work in concert with one another.

C. Notification

Upon notification by any jurisdiction of a regional incident or regional emergency, RICCS will provide a communication platform to support the coordinated response of the participating agencies. RICCS provides for the multi-directional flow of communications. Communications will be made in cooperation with R-ESF #2—Communications Infrastructure.

1. RICCS notification is for informational purposes only. RICCS is designed to facilitate the ability of all sections of the healthcare community to communicate with one another and with the public in an emergent situation.
2. RICCS is not intended to usurp everyday channels of communication but rather to facilitate the coordination of communication when the system must be expanded to deal with an unusual situation.
3. It is anticipated that different types of incidents will result in notification messages being transmitted among members of R-ESF #8 through the RICCS. Notification of R-ESF #8 concerning regional incidents or emergencies involving chemical, nuclear, radiological, explosive, and natural hazards such as floods and tornadoes will likely be originated by other R-ESFs (such as R-ESFs #4, #9, and #10). Bio-event notification of R-ESF #8 will likely take place among R-ESF #8 participants.
4. In a bio-event, the initial case(s) is reported by the hospital/private practitioner to the local health department, which in turn notifies the COG Health Officials Committee. This body is responsible for ensuring that appropriate notifications regarding the event are made through the RICCS for regional incidents and regional emergencies.
5. Subject matter and type of incident will drive the participation in the RICCS conference call. Additional members will be included from the participating organizations as determined by the COG Health Officials Committee.

D. Coordination

In addition to bio-events, there are other situations that will require convening R-ESF #8. These situations include contaminated water supply, hazardous materials spill, an explosion, etc.

1. Initial Actions

Four-Level Risk Assessment Module:

The health communication and coordination process for regional incidents and regional emergencies involving a bio-event will follow a four-level risk assessment module, as follows:

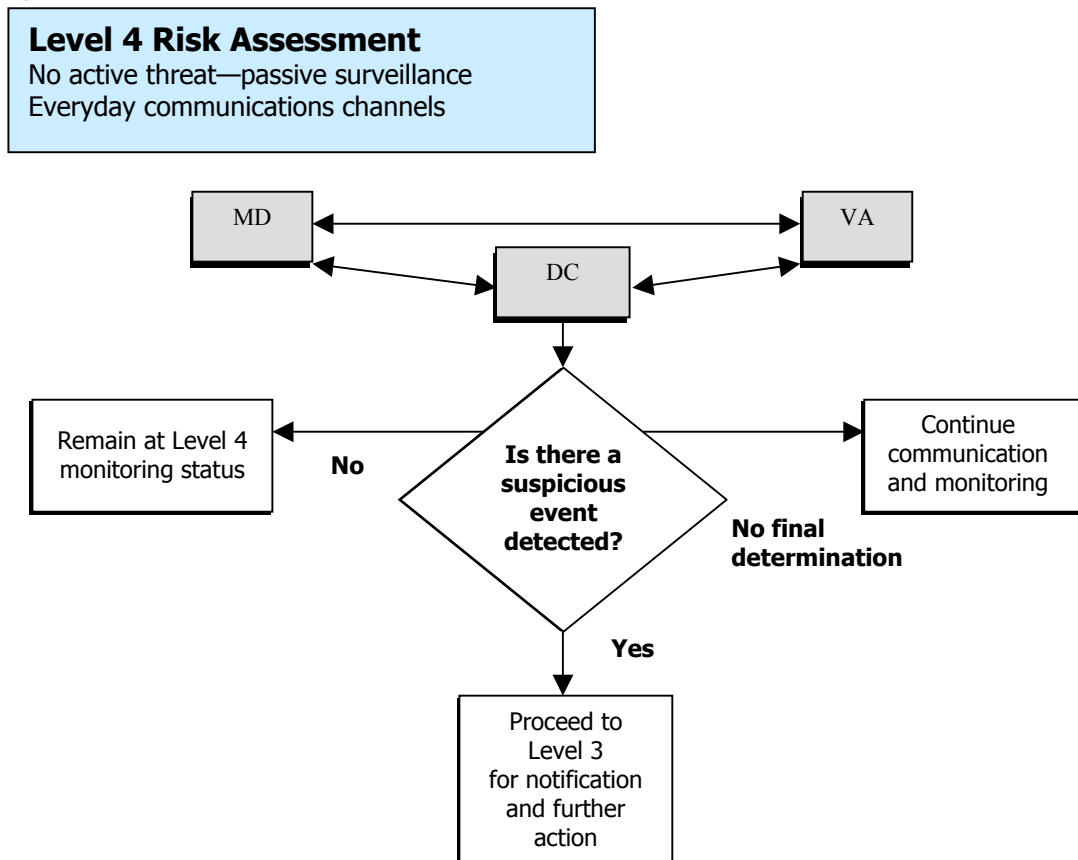
Risk Level 4	No active threat
Risk Level 3	Potential bio-event
Risk Level 2	Possible bio-event
Risk Level 1	Confirmed bio-event

This risk assessment module has been adapted from the one used in the Federal Response Plan (FRP). Comparable four-level risk assessment modules are being incorporated into various health response plans throughout the NCR, including the Metropolitan Washington Council of Governments West Nile Virus Response Plan.

Risk Level 4

- Local and state health departments maintain on-going passive surveillance in accordance with existing local, state and federal requirements.
- State epidemiologists in Maryland, Virginia and the District of Columbia regularly share disease-related data.
- Hospitals and private practitioners maintain communication with their local health departments through established lines of communication and reporting systems, including identifying and reporting all reportable diseases as mandated, as well as any anomalies.
- If an anomaly is detected, the NCR moves to Risk Level 3.

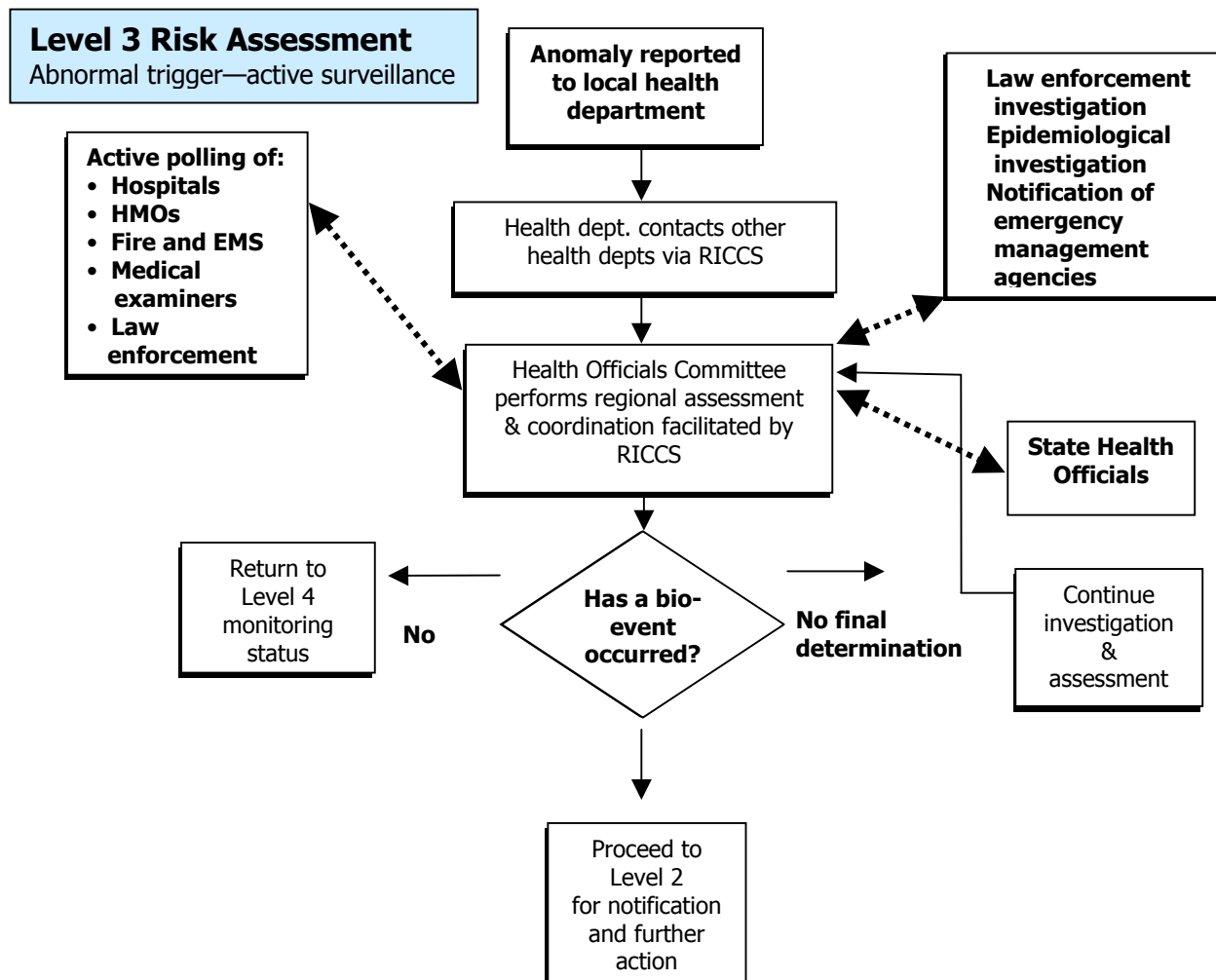
Figure 8-1: Level 4 Risk Assessment



Risk Level 3

- An anomaly is detected and reported to a local or state health department.
- A local or state health official requests notification of the Health Officials Committee through the RICCS and the committee coordinates a regional assessment.
- Local and state health departments commence active surveillance and enhanced communications with local sentinel hospitals, HMOs, medical examiners, fire and EMS, and law enforcement officers.
- Emergency management agencies are notified.
- Epidemiological investigations and law enforcement investigations commence.
- Hospitals and private practitioners maintain communication with their local health departments through established lines of communication and reporting systems.
- Local and state officials will make a determination as to whether a bio-event has occurred once the investigation is conclusive. If a bio-event has occurred, the National Capital Region moves to Risk Level 2.

Figure 8-2: Level 3 Risk Assessment



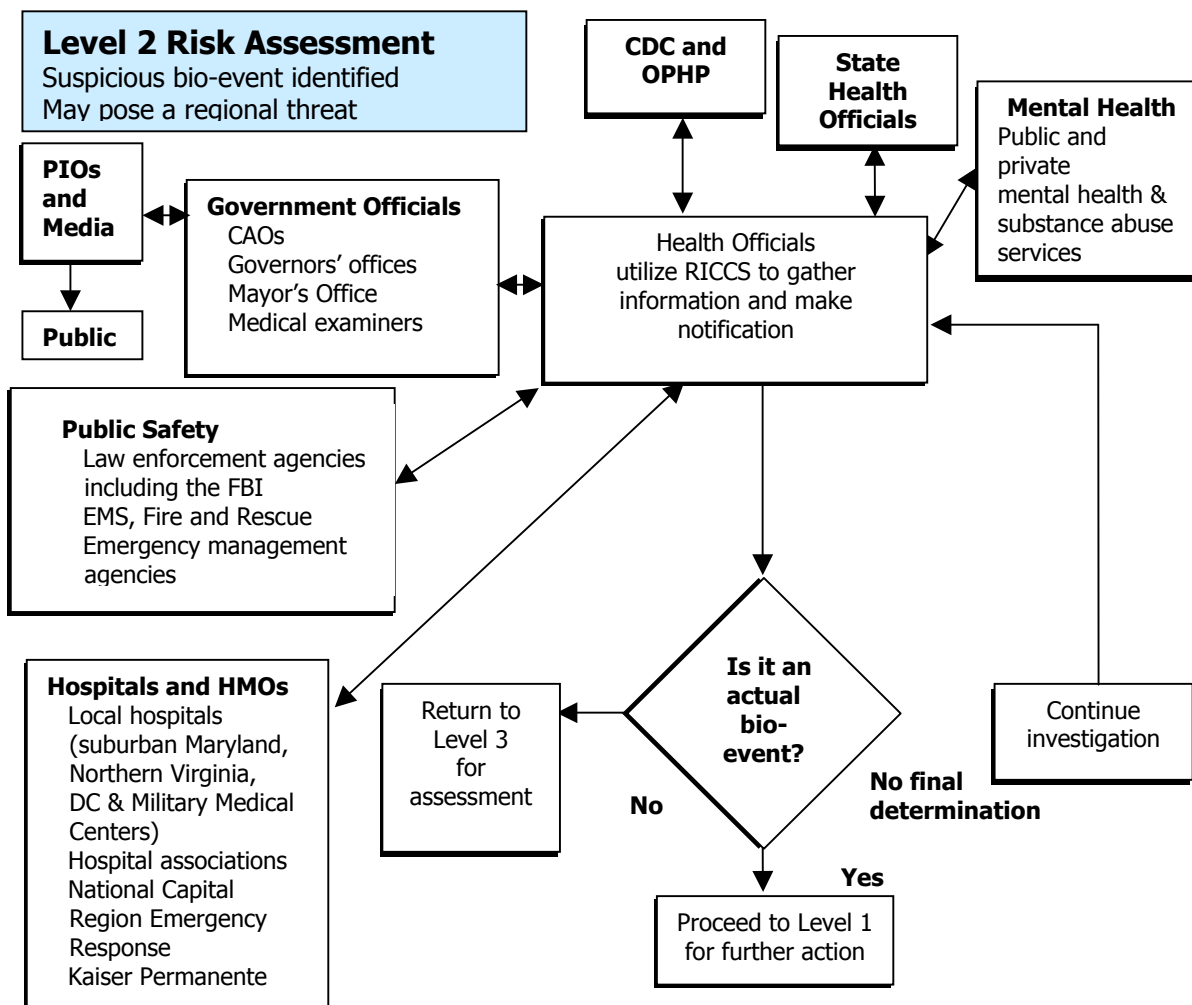
2. Continuing Actions

Risk Level 2

- A bio-event has been identified that may pose a regional threat.
- The local and state health officials utilize the RICCS to share information among public and private health sectors to determine the regional public health significance and threat of the bio-event.
- A regional epidemiological investigation is expanded and active surveillance throughout the National Capital Region continues.
- Local health departments follow current requirements and report to appropriate local, state and federal agencies.

- Private providers receive notification from health departments, medical societies, the CDC Health Alert Network, HMOs and other existing information-management systems.
- Hospital emergency departments receive alert notifications from health departments, hospital associations, and H-MARS.
- Mental health service providers are notified.
- Public health officials will brief key elected officials and decision-makers, who will then determine what information will be shared with the public, when to brief them, and the potential need for a declaration of a State of Emergency. (The public can be given appropriate information and instructions via the Emergency Alert System (EAS).)
- If a bio-event of regional significance is confirmed, the National Capital Region moves to Risk Level 1.

Figure 8-3: Level 2 Risk Assessment



Risk Level 1

- A bio-event of regional significance has been confirmed.
- EEIs are gathered from the relevant communication clusters through the RICCS, including those health EEIs listed in Figure 8-4 below.
- If the appropriate authorities declare a presidential State of Emergency, the FRP is activated and the FBI and FEMA will be included in the communication and coordination process.

Figure 8-4: Level 1 Risk Assessment

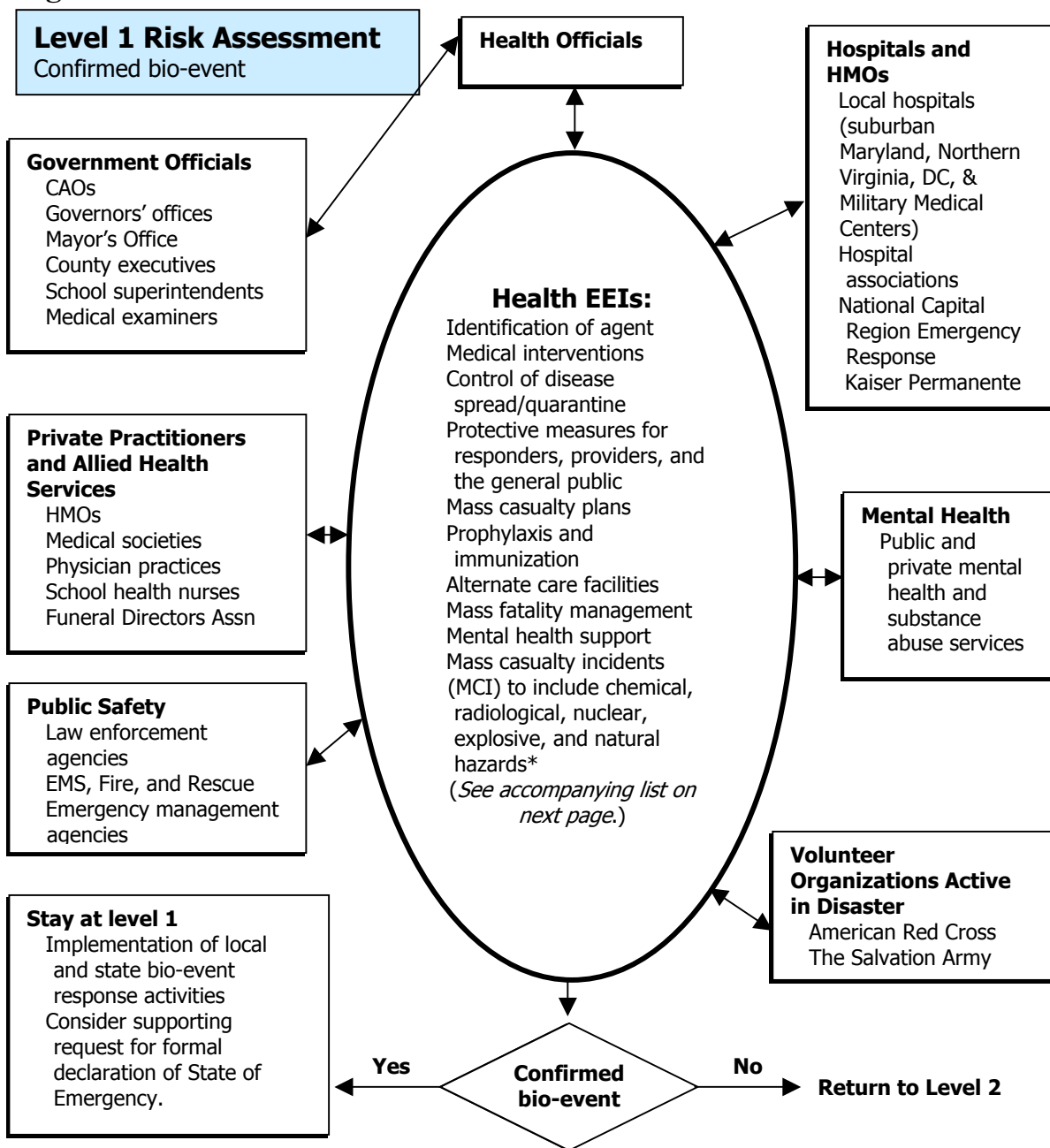


Figure 8-4: Level 1 Risk Assessment, continued

**Health EEIs (continued):
*List of Chemical, Radiological,
Nuclear, Explosives, and Natural
Hazards EEIs***

Casualty counts
Need to request State and Federal medical assets—
DMATs, DMORTS, NMRT, etc.
Status of EMS personnel and services—support
needed
Supporting/staffing casualty collection points
Assessment of in-patient capacity
Bed-tracking systems—types of beds available
Availability of medical resources—personnel,
equipment, supplies
Patient tracking and locator systems
Family reunification/relocation
Fatality tracking, identification and management
Patient evacuation from scene
Relocation and/or discharge of patients to alternate
sites (NDMS)
Identification of agent by HazMat
Hospital decontamination and personal protective
equipment capability
National Pharmaceutical Stockpile—logistics
Security at fixed facilities
Need for “field hospitals”
Subject matter expertise in any of the above hazards
Ability of medical community to maintain “status quo”

3. Stand Down

At the point where the regional incident or regional emergency is no longer affecting more than one jurisdiction, nor requires inter-jurisdictional communication and coordination, a notification will be made through RICCS and a stand down debriefing conference call will take place.

As there may be many long-term sequelae that require regional attention there may need to be regional communication on an ongoing basis for some incidents.

4. After-action Critique

Within four weeks of stand down of the regional health incident or emergency, information for an after action critique will be gathered by the participating organizations and the Health Officials Committee will convene a meeting of interested persons to share lessons learned.

V. Responsibilities

A. R-ESF #8 Participating and Supporting Agencies

The primary purpose of the R-ESF #8 is to facilitate communication and coordination among jurisdictions before, during, and after regional incidents and regional emergencies. Health, mental health, and medical services partners coordinating in a regional response will use RICCS to facilitate communication and coordination of information and response to a regional incident or regional emergency.

B. Essential Elements of Information

1. One of the primary purposes of the RECP is to facilitate the exchange of information among the signatory agencies during emergency situations. R-ESF #5—Information and Planning is responsible for the exchange, analysis, reporting and dissemination of regional information. R-ESF #5 contains detailed information about the process of information exchange and describes regional EEs, which have been determined as the minimum essential information categories to satisfy coordination needs among the R-ESFs and through RICCS.
2. In the event of a regional incident or regional emergency, with R-ESF #8—Health, Mental Health, and Medical Services, state, local, and regional agencies will be able to exchange information (to the best of their ability) about many topics, including, but not limited to:

Jurisdictions involved;
Status of health, mental health, and medical, resources, personnel, equipment, supplies and facilities impacted by the incident/threat of incident;
Actual/potential (social, economic, political) impacts on the function and/or jurisdiction;
Other R-ESFs potentially impacted;
Overall resource shortfalls, response needs and priorities;
Relevant historical and demographic information;
Short term, medium and long-range response and recovery plans;
Recommendations for emergency ingress/egress for responders;
Assessment of health/medical needs, including in-patient capacity;
Health surveillance, including infectious disease surveillance;
Patient identification, tracking and evacuation requirements;
In-hospital care;
Food/drug/medical device safety;
Worker health/safety;
Radiological/chemical/biological hazards consultation and technical assistance, decontamination of victims and health and medical personnel;
Mental health care for victims, asymptomatic possibly exposed individuals, response personnel, health and medical personnel, general public, persons already in treatment, and persons concerned about possible exposure;
Public health informational/risk communication on public health issues, to include protective actions recommendations (PARs);
Vector control;
Potable water/wastewater and solid waste disposal testing;
Veterinary services and animal control;
Victim identification;
Credentialing requirements;
Liability issues and concerns;
Patient tracking/locator capabilities;
ESF #6—Mass Care issues concerning schools, children, family assistance centers, family reunification centers, and foster care; availability of Crime Victim Compensation Funds;
ESF #4—Firefighting issues concerning injuries and medical emergencies (including status of emergency medical services personnel, activities and needs);
ESF #10—Hazardous Materials concerning injuries and medical emergencies, decontamination options and information for hospitals on agent(s) identified;
ESF # 1—transportation issues dealing with access to care and transport of supplies and personnel;

Agricultural services and related issues;
Veterinary services and related issues;
National Pharmaceutical Stockpile—issues concerning reception, placement, distribution, security and dispensing;
Distribution of prophylactic medications and immunizations; and
Security services at health, mental health, and medical facilities.

VI. Preparedness Cycle

A. Planning

1. Planning includes a comprehensive review of existing capabilities and an analysis of strengths and gaps;
2. Roles and responsibilities during an incident are defined and communications interfaces developed so that all sectors of the healthcare community can receive the identical information without compromising patient confidentiality;
3. This enables effective decision-making and communication thereof to both healthcare providers and the public;
4. Agent fact sheets with appropriate instructions are developed in advance and made available for dissemination to providers and the community in the event of an incident;
5. A regional approach to locating, storing, managing and disbursing supplies from the National Pharmaceutical Stockpile is developed;
6. R-ESF #8 and COG are responsible for assisting with the R-ESF #8 preparedness cycle; and
7. The COG Health Officials Committee will facilitate coordination among member organizations to ensure that R-ESF #8 procedures are appropriately followed and are in concert with the stated missions and objectives of the RECP.

B. Training

1. Ongoing training presented by different organizations is codified and published so that all members of the healthcare community can attend the appropriate classes; and

2. Classes will include those provided by the different institutions and academic entities in the National Capital Region as well as State and Federal and distance learning opportunities.

B. Exercises

1. Exercises, both local and regional, are conducted on a regular basis and the participation of the different jurisdictions is solicited to create a coordinated regional response structure;
2. These will be tabletop, functional and/or field exercises that will exercise all elements of the healthcare community in conjunction with their counterparts in other emergency response agencies; and
3. Multi-disciplinary, multi-agency cooperation is a key component of an effective response mechanism.

C. Evaluation

After-action reports (AARs) will be developed for both real (e.g. October Anthrax) and notional (e.g., DC EMA Flu Exercise, Montgomery County NPS Retreat) events.

E. Corrective Action

Lessons learned from exercises and real world experiences will be captured and entered into a database where they will be available on request by the member jurisdictions.

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APPENDIX C

Public Health Functions

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Key Public Health Functions

The primary public health functions are set forth in the Institute of Medicine's landmark publication *The Role of Public Health: Assessment, Planning, Assurance and Provision of Care*.

The key essential public health functions applicable to this plan are as follows:

1. Planning

- Develop collaborative plans. Each Health Department has developed collaborative plans with the community hospitals, medical societies, managed care organizations, all of the government agencies, and the specialized community organizations. For the sake of this document, we will call these the public health system collaboratives, recognizing the various terminologies assigned to the multidisciplinary standing groups. Specific collaboratives have determined their roles and responsibilities in regard to support of the public health plan. Extensive detailed work has been accomplished reflecting labor agreement, medical liability, logistics, communication mechanisms, and facility management.
- Request and coordinate the Strategic National Stockpile (SNS) distribution. The SNS has been established along with distribution routes and security storage mechanisms. Vender Managed Inventory (VMI), or "just-in-time" inventories, have been established to provide medical supplies before the SNS arrives in the NCR.

2. Assessment

- Maintain and enhance relationships with members of the medical community to ensure a climate of early reporting by astute clinicians
- Operate Disease Control programs. Each Health Department is part of a CDC-sponsored disease reporting network. Diseases specified by State Law establish the guidelines for reporting, along with the penalties for non-reporting. There are established protocols associated with the assessment and clinical follow-up and communication of such events.
- Continuously conduct surveillance to detect emerging anomalies. The NCR has developed the nation's first Regional Syndromic Surveillance System (RSSS). The system was developed by senior epidemiologists at the state and local levels in partnership with the Johns Hopkins University Applied Physics Laboratory. The system, known as the National Capital Region's Enhanced Surveillance System (NCR-ESS), operates under the guidance of the COG Health Officials' Committee (HOC).
- Effectively communicate on a routine basis with allied response agencies to assess and explain abnormal disease events

- Participate in joint forensic investigations with Public Safety partners when called for by the Incident Commander. Members of the Public Health community have partnered with local, state and federal law enforcement agencies to form joint forensic investigation teams. These teams have developed specific methods of evidence/specimen acquisition, interviewing/interrogation techniques, along with joint notification procedures.
- Provide medical information and guidance to the public information officer (PIO). This includes assistance in developing and issuing pertinent public information bulletins, as well as technical information directed to the medical community and other agencies about how to control the disease in the population. Each jurisdiction has developed a system to coordinate with the local health community. These systems have been tested and are expected to develop further once the interoperability grant has been completed.
- Provide situational information to policy staff and elected officials so that critical, informed decisions may be made to control the impact on the population at large.
- Ensure that communication systems are exercised, enhanced and maintained.
- Ensure that best practices are incorporated into the local health care collaborative process.

3. Provision of Care

- Provide medical care and preventive measures as appropriate
- Establish call-in centers, and walk-in centers in partnership with the mental health community, as needed, to address the mental health aspects of an event
- Provide vaccination and/or dispensing centers

4. Assurance

Unlike public safety, where members are sworn officers and follow a strict command structure, the public health department does not *control* all of the health care providers but is uniquely joined to its partners in private practice, managed care organizations, hospitals, and nursing homes. Public health officials, in their role of providing assurance, seek to

- Maintain a system that ensures maximum performance in the event of an emerging pathogen, mass casualties or other threats.
- Provide and/or coordinate training exercises.
- Assess medical trends, verify “suspect cases,” communicate timely medical information to partners.
- Manage disease control functions including isolation and quarantine.

APPENDIX D

Contingency Plans

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Summaries of COG Contingency Plans

1. **Police Mutual Aid Agreement (1971)**

The adopted agreement provides for interjurisdictional provision of police assistance in times of emergency and in special cases, as a part of normal operations. Provisions include declaration of an emergency, an operational plan, government immunity, employee benefits and the direction and duration of assistance (See below for description of Operational Plan).

2. **Mutual Aid Agreement for Fire and/or Rescue or Ambulance Service (1973)**

The adopted agreement provides for interjurisdictional provision of fire/rescue and ambulance service in times of emergency and includes provisions for the declaration of an emergency, an operational plan, government immunity, employee benefits and the direction and duration of assistance. (See below for description of Operational Plan).

3. **Greater Metropolitan Washington Area Police and Fire/Rescue Services Mutual Aid Agreement Operational Plan (1983) (Revised September 1990) (*Soon to be replaced by a separate fire and a separate police mutual aid operational plan*).**

The plan is based on the authority for implementation of COG's Police and Fire/Rescue Mutual Aid Agreements, and covers both police and fire/rescue operations in a tri-state multi- jurisdictional area. The Joint Operational Plan covers all key elements of regional disaster response including:

Common definitions personnel, equipment and functions that will be called into play in a regional emergency response;

Specific criteria and procedures for requesting mutual aid assistance; Use and deployment of personnel at the incident scene;

Command and control at the incident scene including the duties and responsibilities of the first unit at the scene, a method for identifying the incident commander and incident management team and the role and authority of the jurisdiction in which the incident has occurred;

Specific procedures for the effective use of regional police and fire communications networks in a disaster situation;

A color coding scheme for identification of specific functions and key actors at an emergency disaster scene;

Orderly withdrawal of mutual aid resources once they are no longer needed at the disaster scene.

4. **METRO Rail Transit Fire/Rescue Emergency Procedures Policy Agreement (1997)**

The Metro Rail Transit Fire/Rescue Emergency Procedures Policy Agreement is a body of procedures developed by the regional Fire Chiefs of the Greater Washington Metropolitan area along with the Washington Metropolitan Area Transit Authority (WMATA). These procedures outline the concepts used in emergency operations to ensure the safety of passengers, WMATA employees and fire/rescue personnel during emergencies involving the WMATA Rapid Rail Transit System. These procedures provide for the coordination and performance of specific duties to safely mitigate rail emergencies in the WMATA system. They are not intended to serve as the only set of governing procedures for WMATA or any jurisdictional fire department, but rather provide a foundation in which specific and related operational procedures may be developed and implemented by WMATA and each relevant fire/service agency.

5. **Fire Protection, Equipment and Life Safety Agreement for the Metropolitan Washington Area Metro Rapid Rail Transit System (1976)**

This agreement made between local jurisdictions and WMATA established a METRO Fire Safety Technical Committee consisting of the Transit Authority and the local jurisdictions to determine the equipment and facilities needed for the Fire/Rescue service to provide the necessary medical attention to the public who utilize the rapid rail system. The agreement defines the fire alarm system, dedicated emergency capability, and jurisdictional authority.

6. **Metropolitan Washington Natural Gas Supply Emergency Alert Plan (1978) (Revised January 1988)**

A regional natural gas supply shortage emergency plan was formulated in 1975. It was revised extensively in 1979, to bring it into conformity with a tri-state plan for coping with short-term natural gas shortages. The latest revision was in 1988. The regional plan addresses long-term shortages and outages in addition to short-term shortages. It was developed by COG in coordination with major gas utility companies serving the metropolitan area.

7. **Washington D.C. Metropolitan Area Emergency Alert System Area EAS Plan Draft 1996)**

This plan is the FCC-Mandated document outlining the organization and implementation of the Washington DC Metropolitan Area Emergency Alert System (EAS). It is the guideline for broadcasters and cable TV operators to determine: their mandated and optional monitoring assignments, codes to be used in the EAS Header sequence, schedule of required monthly tests which must be relayed by all broadcasters and cable operations within 15 minutes of reception and any other elements of the EAS which are unique to

this metropolitan area. This plan is an adjunct to the FCC EAS Rules, and is not meant to be a summary, in whole or in part, of those rules.

8. Metropolitan Washington Water Supply Emergency Plan (1994)

This plan is designed to coordinate the actions to be taken by local, state and federal government agencies and water supply utilities in the Washington region in the event of a regional water emergency. The document is divided into four main sections. Section I contains the Washington Aqueduct Water Emergency Plan, which addresses potential health emergencies in that treatment and distribution system. Section II contains the Region-wide Potomac River Emergency Plan, which addresses potential emergencies affecting the raw water supply furnished by the Potomac River. Section III describes those provision of the existing, cooperative operating plans that the utilities and other agencies have developed to minimize the drought risk to the region. Section IV provides a place for participants to insert their own water emergency response plans. This plan replaces the Water Supply Emergency Plan in the 1979 Water Supply Emergency Agreement.

9. Metropolitan Washington Water Supply and Drought Awareness Response Plan: Potomac River System (June, 2000)

This plan provides a plan of action that would be implemented during drought conditions for the purpose coordinated regional response. The Plan consists of two interrelated components: (1) a year-round plan emphasizing wise water use and conservation; and (2) a water supply and drought awareness and response plan. The year-round wise water use program applies to the entire region is under development; what is presented is the basic framework and initial key messages. The Water Supply and Drought Awareness Plan contains four stages and is primarily designed for those customers who use the Potomac River for their drinking water supply. The Plan will eventually be expanded to incorporate all water supply systems throughout the region.

10. Transportation Contingency Plan For The Metropolitan Washington Area (1980)

In 1980, COG developed a regional plan for coping with a disruption of public transit service. This plan was the result of a coordinated effort by COG, WMATA and the respective State transportation departments, which serve metropolitan Washington. It presents considerations which should be addressed by local jurisdictions in the formulation of their individual detailed plans, such as the designation of certain roadways for use by multi-passenger vehicles only, parking concessions in the Central Business District, increased use of car pools, and the ways of encouraging more people to either walk or ride bicycles to work. It also established communications procedures among WMATA, COG, local and state governments, the media and the public during the emergency period.

11. Metropolitan Washington Water Supply Emergency Agreement (1979)

Adopted in 1979 to create coordinated area wide water conservation as well as curtail water use during periods when available water supplies were insufficient to meet the water supply demands of the utilities due to drought or water outages. The agreement consist of two parts: Water Supply Emergency Plan (WSEP) and the 1978 Low Flow Allocation Agreement (LFAA). The WSEP was replaced in 1994 by the Metropolitan Washington Water Supply Emergency Plan. The LFAA defines the severity of the shortage, which in turn activates implementation of conversation measures stipulated in the WSEP. In addition to defining implementation of conversation measures the WSEP also provides the framework by which information is released. Signatories to the agreement include fifteen metropolitan Washington local government jurisdictions as well as the Fairfax County Water Authority, Loudoun County Sanitation Authority, Washington Suburban Sanitary Commission and the Metropolitan Washington Council of Governments.

Low Flow Allocation Agreement (1978) (Modified 1982)

Originally signed in 1978 and modified in 1982 this agreement, which is administered by the Army Corps of Engineers, defines the severity of a water supply shortage in stages and established the allowable withdrawal of water from the Potomac River during low flow.

Signatories to the agreement include: Commonwealth of Virginia, State of Maryland, District of Columbia, Corps of Engineers /Washington Aqueduct Division, Washington Suburban Sanitary Commission, and the Fairfax County Water Authority.

12. Metropolitan Washington Regional Power Emergency Alert July 1985 (Revised October 1998)

A regional power emergency alert plan was developed and adopted in 1980 by all COG member jurisdictions and electric utility companies which serve the metropolitan Washington area. The plan defines the various categories and levels of severity of electric power emergencies which might occur, and assigns responsibilities and tasks for governments and power companies for each contingency. The plan was revised in July 1985, in February 1988 and again in October 1998.

13. Tri-State Metropolitan Washington Area "Points of Agreement" on Emergency Motor Fuel Sales Restrictions (1982)

The "Points of Agreement" signed by the states of Maryland, Virginia and the District of Columbia covering odd-even, minimum purchase and flag system procedures to be implemented when emergency motor fuel sales restriction occur in the metropolitan area.

14. Metro Rapid Rail Transit Fire/Rescue Operations Procedures Guidelines (1982) (Revised 1993)

These guidelines provide basic guidance and directions to fire/rescue service personnel who may be called upon to respond to fire/rescue incidents occurring on the METRO Rapid Rail Transit System operating in the Washington metropolitan area. Operational procedures include evacuation, emergency ventilation, and communications in response to emergency services conducted on the METRO system. This document is also designed to provide guidance to individual fire/rescue operational procedures for the portions of the system operating in both "Start Up" and revenue service. These guidelines update and supersede the original "METRO Rapid Rail Transit Fire/Rescue Operations Procedures Guidelines" published in August 1977 and further revised in 1982.

15. Unified Regional Snow Emergency Plan for the Washington Metropolitan Area (April 1997)

This revision to the original regional snow plan of 1988 was prompted by the need to correct outdated segments of the plan, and especially in light of lessons learned from the Blizzard of 1996. One lesson learned from the Blizzard of 1996 was to address the public's expectation of what realistic government services a citizen should expect during a large winter storm. The Metropolitan Washington Winter Storm Travel Guide (Penguin Guide), included in this revision, is an attempt to address citizen expectations. Another lesson was for local governments to develop closer ties with federal agencies to aid in any extraordinary response and recovery efforts to a snow emergency in order to open the federal government as soon as possible after a storm. Inclusion of federal agencies such as FEMA and FHWA and their regional offices in all conference calls is one example of closer coordination with the federal government. A major deficiency of the old plan was that it was nearly silent on snow removal and dumping as opposed to snow clearing operations. The new plan seeks to expand on in-house snow removal operations by using private sector contractors from a newly developed contractor resource listing -an attempt to lessen the competition for private sector assets for clearing and removal during deep snows. The revision also attempts to streamline the flow of information by changing the plan format from long narrative descriptions of intended actions to a series of action steps. The steps concentrate on group action at the regional level to address unique aspects of winter weather emergencies, with less emphasis on the detail of how individual agencies should conduct snow operations. The emphasis is on cooperation and communication at the regional level and not in the detail of how to plow snow at the local level. An important change in the area of cooperation and communications is a switch from an early dismissal plan based on "residential zones" to one based on "adjusted work dismissal".

16. Metropolitan Medical Strike Team (MMST) Operational System Description (1997) *Available upon request due to bulk size of document.*

It is the mission of the MMST to respond to, provide support for, and provide assistance to local and regional jurisdictions to effectively address responder safety issues, incident management, and public health consequences of NBC incidents that result from accidental or deliberate acts. This support and assistance includes providing planning and training to response personnel prior to an NBC incident, identification of the offending substance via available technology, off-site management consultation service, and, where

needed, response to the scene or secondary site to assist with incident management and medical care during an NBC incident. These activities will be conducted in collaboration with and supported by federal, state, and local authorities.

17. Potomac River Public Safety Agreement (October 2000)

The purpose of this agreement is to cooperate in the enhancement of Potomac River safety through public education of safe recreational practices and through coordinated rescue efforts. The parties agree to provide and maintain available equipment, material, communications devices, and personnel to support River Public Safety Programs. Inventories of available support items will be worked out by committee actions involving representative of the agencies involved. Parties agree to have their respective law enforcement agencies participate in law enforcement activities on land and on the River, consistent with applicable statutes or regulations of the State of Maryland, the Commonwealth of Virginia, and the District of Columbia, the United States Coast Guard, and the National Park Service. The agreement will be for the purpose of promoting the safety, health, and welfare of visitors on the waters of the Potomac River and on the adjacent national and regional parks. Parties further agree to develop an operational plan for incident management through the Metropolitan Washington Council of Governments. This plan will ensure that the direction of proceedings of specific law enforcement and rescue situations by a single individual (Incident Commander) will be consistent with the current Metropolitan Washington Council of Governments Police and Fire Mutual Aid Agreements and the Mutual Aid Operational Plan.

18. Potomac River Emergency Incident Response Plan (October 2000)

An emergency situation occurring on the Potomac River presents a host of unique rescue problems due to the water environment, the terrain adjacent to the river, and the myriad of vessels which use the Potomac River, both commercially and recreationally. These problems include accessibility, life safety hazards, logistics, hazardous materials and exposure problems. Because of these unique circumstances, the region has developed a comprehensive plan to protect and serve citizenry and visitors, as well as vessels which frequent the city and the region and the crews who serve on both recreational and commercial vessels.

19. DC AMBER PLAN -America's Missing: Broadcast Emergency Response for the Greater Washington DC Broadcast Area (June 2001)

The purpose of the AMBER Plan is for law enforcement agencies to collaborate with local broadcasters in serious child abduction investigations for the safe and swift return of missing children. Under the plan, radio and television stations immediately interrupt programming to broadcast information about a child abduction by using the Emergency Alert System (EAS). The DC AMBER Plan is implemented when four criteria are met.

20. Planning Guidance for the Health System Response to a Bioevent in the National Capital Region (Completed Document Expected in Early September 2001)

This planning guidance is designed to facilitate the coordination of medical actions that local, state, and federal government agencies and medical providers in the national capital region would take in responding to a bioevent. The Guidance optimizes the use of existing authorities, organizations, resources, systems, and programs in the NCR and integrates these assets into a cohesive response capability. The goal of the Guidance is to strengthen the health care response systems, allowing them to meet the following objectives: improve early recognition of bioevent; provide prevention strategies including mass immunization/prophylaxis provide mass care; provide respectful and safe disposition of the decedent; and secure environmental surety.

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APPENDIX E

Training Recommendations

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Training Recommendations

Health Officers' Committee

MWCOG

May 18, 2004

Problem Statement

Since the Anthrax events of October 11, 2001, the response role of Public Health in homeland security and emergency preparedness has dramatically changed.

Most of the Public Health staff that will respond to weapons of mass destruction and other health emergency or surge event are currently detailed with staffing HIV, immunization and maternity clinics, or working as community health, field or school nurses, or are public health technicians.

Public health surge and emergency response planning relies heavily on this group to provide staffing to medication and prophylaxis dispensing sites; to help coordinate auxiliary actions during mass casualty response; and to help investigate and control infectious disease outbreaks of natural or terrorist cause. They will also play a significant role in any event requiring regional quarantine or shelter-in-place.

To date, outside of management, very few public health staff have been trained to perform these functions.

Long standing under-funding of the Public Health sector has resulted in persistent staffing shortages along with a lack of Public Health specific trainings. Recent federal funding has enabled the States to augment their local response by adding planning and investigative personnel to Health Departments. However, unlike other first responder agencies, Public Health does not have shift personnel and remains largely unable to backfill necessary Health Department functions that would allow a majority of staff to attend trainings. Training opportunities for Public Health staff need to minimize the time impact on ongoing duties.

While Public Health departments share broader goals for emergency preparedness, their scope of specific responsibilities often varies by jurisdiction. Health departments currently implement trainings specific to their staff's current competency and limitations of time and budget. The development of standardized, health specific trainings improves the interoperability of health departments during a large-scale emergency response and sets core competencies that allow better understanding of the NCR's response capabilities. Providing segments of these trainings online increases participation, reduces impact to ongoing clinical duties, focuses in-person training on exercising knowledge,

improves volunteer responder participation, enables cost-effective sharing with extended health community and provides long term sustainability.

Goals

- Public Health Departments will have staff that is trained and prepared to respond to natural and manmade disasters as detailed in their emergency preparedness plans.
- The region will develop a sustainable Public Health emergency response training infrastructure that provides core competencies and facilitates Health Department participation while minimizing loss of staff time and ongoing Public Health services.
- The region will implement trainings that match jurisdictional priority needs and are adaptable to reflect varying roles/responsibilities of local Health Departments, while providing regionally consistent information.

Objectives

- Provide trainings that are flexible enough to meet the needs of the current Public Health work force
 - Trainings specific to the public health community
 - Single or half day trainings
 - Trainings that are available online or on CD-ROM
 - Locally available and regularly offered live trainings
- Develop training materials that are sustainable and can be reasonably extended to the broader health community
 - Online or CD-ROM training videos
 - Volunteer Health Responders
 - Clinical Responders
- Track trainings and staff to determine standing proficiencies within Public Health and the National Capitol Region
 - Support tiered levels of trainings to meet staff and management needs

Core Emergency Preparedness Trainings

- I. Incident Command System for Public Health**
 - 4 hours online; 4 hours in-person exercising / training
 - Basic proficiency – all career responders, all volunteer responders
 - Advanced proficiency – command staff (applies to 20% career staff that have already received basic)
 - Based on course developed by CDC / NACCHO / FEMA
- II. Dispensing / Vaccination Site Roles and Responsibilities**
 - 4 hours online; 4 hours in-person exercising / training
 - Basic proficiency – all career responders, all volunteer responders
 - 4 Advanced modules for specific roles

III. Correct use of Basic Health personal protective equipment - N95s OSHA regulations / Basic Infection Control Practices to reduce disease transmission / OSHA Updates

- 1 hour online; 2.5 hours in-person, including ½ hour fit-testing
- Basic proficiency – all career responders, all volunteer responders
- Yearly requirement

IV. Basic Awareness of Weapons of Mass Destruction (WMD)

- 2 hours online; 2 hours in-person exercising / training
- Basic proficiency – all career responders, all volunteer responders

Longer Term Training Needs

Additional Public Health Homeland Security Trainings

- Forensic Epidemiology
- Surge Capacity and Capability
- Roles and Responsibilities in Quarantine and Isolation
- Mental Health Implications in Crisis Management
- GIS for Public Health Application

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APPENDIX F

NCR Surge Plan and Bed Equipment List

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National Capital Region Hospitals Surge Bed Equipment/Supply List & Floor Space Analysis Plans for the Urban Area Security Initiative Grant (Year 1)

The National Capital Region's licensed and accredited hospitals identified in the UASI grant have been working closely together to develop a synchronized disaster plan that includes increasing regional hospital bed surge capacity to 500 beds per million regional residents.

National Capital Region hospitals have varying capabilities for responding to major biological or other catastrophic events. Therefore, improving regional hospital surge capacity will require individual hospital floor space analyses, improvements of infrastructure, and additions to operational bed surge capabilities. For the purpose of this UASI grant, hospital surge capacity is defined as the ability of a healthcare system to rapidly expand to meet the demand for care, which overwhelms the supply, offered by that system, either because of the number or complexity of the patients or a collapse or limitation of a critical system element. Additionally, surge capacity includes the ability to expand care capabilities in response to a prolonged demand, with surge capacity encompassing potential patient beds; space for triaging, managing, vaccinating and decontaminating patients; available personnel of multiple skill types; necessary medications, supplies, and equipment; and the legal capacity to deliver healthcare under situations that exceed normal capacity.

* * * * *

This document is intended to serve as guidance for NCR hospitals' surge equipment purchases for the UASI grant. In the planning of additional surge beds, the amounts in the attached equipment and supply list were based on a 100-bed surge definition to be scaled up as needed for the National Capital Region (NCR) hospitals of this region. The list represents an estimate of minimum levels required to prepare for different levels of care & response to Chemical Biological Radiological and Nuclear Events (CBRNE) resulting in the increased mass casualties that will require additional surge capacity.

Please note that staff training is a separate but necessary component that is tied to the implementation of additional surge equipment as part of an overall hospital surge capacity plan.

In addition, pharmaceuticals have not been included because of the parameters of the UASI grant. Hospitals plan to address this need through other sources of emergency preparedness funding.

Assumption: Each hospital has varying surge capacity and will conduct individual surge space analyses of their facilities and may customize and enhance surge beds above the minimum standard with supplies and equipment outlined in the attached list, in keeping with their specialties (e.g. acute, burn, trauma, pediatric, psychiatric, rehabilitation services). For the purposes of this grant the minimal definition of a surge bed is a cot with IV fluids. Individual hospitals should establish the number of each bed type that will best suit their facility. Regional uniformity in beds and equipment is encouraged through the sharing of equipment/supply specifications, price and vendor information.

Floor Space Analysis

In conducting a floor space analysis study for each hospital, identify available space for additional "beds". Available space may include areas such as lobbies, hallways, cafeterias in the hospital or other alternate facilities. Contiguous space places less demand on staffing. Use on site facilities first to take advantage of supplies, equipment and staff. Identify capability for electrical supply.

Some other factors to consider are:

- Cancellation of elective surgery and use of recovery room beds as "surge".
- Beds need 7' by 3' of space and ideally include an additional 36" of surrounding area for supplies, equipment and privacy.
- Identification of the following three levels of surge beds:
 - Triage/ED
 - Med/Surge
 - Critical Care Beds

Proposed Equipment/Supply List for 100 Bed Surge Capacity 50 Triage/ED Beds; 50 Critical Care Beds

National Capital Region Hospitals		
Bed Types		
Triage/ED Beds	Medical-Surgical Beds	Critical Care Beds
<p>This bed type is for the rapid assessment and initiation of all emergency care, life-saving treatments, and decontamination procedures.</p> <p>Equipment</p> <p>The equipment listed is intended as a supplement to existing emergency room supplies. The following list provides equipment necessary for emergency department, triage, decontamination, and life-saving procedures. Due to the high cost associated with these items, the quantities will be determined according to funding.</p> <p>Trays:</p> <ul style="list-style-type: none"> Arterial Line Trays Burn Trays Cardiac Arrest Trays Central Line Trays Cut-down trays 	<p>This bed type is for patients having a lower mortality risk but requires hospitalization, physician and nursing care. May require ongoing and intermittent interventions such as vital signs, IVs, EKGs, and Pulse-Ox monitoring.</p> <p>Supplies</p> <p>All supplies and equipment have been calculated within the Critical Care bed category. This will allow for an upward or downward adjustment based on the acuity of illness.</p>	<p>This bed type will allow for the care of patients with instability to one or more vital organ systems. May require continuous cardiac, respiratory, and invasive monitoring, as well as intensive nursing care and physician intervention.</p> <p>Equipment</p> <p>The equipment list is intended as a supplement to existing critical care supplies. The following list provides equipment needs for critical care procedures. Due to the high cost associated with these items, the quantities will be determined according to funding.</p> <p>Trays:</p> <ul style="list-style-type: none"> Arterial Line Trays Burn Trays Cardiac Arrest Trays Central Line Trays Cut-down trays Drainage Holder

<p>Drainage Holder</p> <p>Intracranial Pressure Trays</p> <p>Lumbar Puncture Trays</p> <p>Suture Trays</p> <p>Thoracentesis Trays/ Pleurevac</p> <p>Thoracotomy Trays</p> <p>Tracheotomy Trays</p> <p>Monitors:</p> <p>Arterial Line monitors</p> <p>Cardiac monitors</p> <p>Continuous O2/Pulse-Ox Monitors</p> <p>Pulmonary artery monitors</p> <p>Swan Ganz/CVP monitors</p> <p>Temperature probe</p> <p>Respiratory Equipment:</p> <p>Bronchoscope</p> <p>Cascade gauge for oxygen cylinders</p> <p>Cylinder holders for E Cylinder oxygen tanks</p> <p>ET Tube Exchanger</p> <p>Gas Jet insufflator</p> <p>Regulator, Oxygen (Flow meter)</p> <p>Suction unit - Collection System</p>		<p>Intracranial Pressure Trays</p> <p>Lumbar Puncture Trays</p> <p>Suture Trays</p> <p>Thoracentesis Trays</p> <p>Thoracotomy Trays</p> <p>Tracheotomy Trays</p> <p>Monitors:</p> <p>Arterial Line monitors</p> <p>Cardiac monitors</p> <p>Continuous O2/Pulse-Ox Monitors</p> <p>Pulmonary artery monitors</p> <p>Swan Ganz/CVP monitors</p> <p>Temperature probe</p> <p>Respiratory Equipment:</p> <p>Bronchoscope</p> <p>Cascade gauge for oxygen cylinders</p> <p>Cylinder holders for E Cylinder oxygen tanks</p> <p>ET Tube Exchanger</p> <p>Gas Jet insufflator</p> <p>Regulator, Oxygen (Flow meter)</p> <p>Suction unit - Collection System</p> <p>Suction unit – Portable</p>
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<p>Suction unit – Portable</p> <p>Suction unit Battery</p> <p>Tank, Oxygen E cylinder (700 L O2)</p> <p>Tank, Oxygen H cylinder (7000 L O2)</p> <p>Ventilators</p> <p>Wrench, Oxygen Tanks</p> <p>Other Equipment:</p> <p>Auto Blood Transfuser</p> <p>Automated Blood Pressure Cuffs</p> <p>Bear Hugger Hypothermia machine</p> <p>CO2 Detector</p> <p>Crash Carts w/defibrillator/external pacer- Adults and Peds (2)</p> <p>Dermabond wound-closing glue (30)</p> <p>Dialysis Capability</p> <p>EKG Machine</p> <p>Electrical Outlets</p> <p>Hypo/Hyperthermia Blanket</p> <p>IV Pumps</p> <p>Otoscope/Ophthalmoscope</p> <p>PCA pumps</p> <p>Peripheral Nerve Stimulator</p> <p>Pulse-Ox</p>	<p>Suction unit Battery</p> <p>Tank, Oxygen E cylinder (700 L O2)</p> <p>Tank, Oxygen H cylinder (7000 L O2)</p> <p>Ventilators</p> <p>Wrench, Oxygen Tanks</p> <p>Other Equipment:</p> <p>Auto Blood Transfuser</p> <p>Automated Blood Pressure Cuffs</p> <p>Bear Hugger Hypothermia machine</p> <p>CO2 Detector</p> <p>Crash Carts w/defibrillator/external pacer- Adults and Peds (2)</p> <p>Dialysis Capability</p> <p>EKG Machine</p> <p>Electrical Outlets</p> <p>Hypo/Hyperthermia Blanket</p> <p>IV Pumps</p> <p>Otoscope/Ophthalmoscope</p> <p>PCA pumps</p> <p>Peripheral Nerve Stimulator</p> <p>Pulse-Ox</p> <p>Rapid Blood/Volume Infusers</p> <p>Sliding transport board</p>
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<p>Rapid Blood/Volume Infusers</p> <p>Sliding transport board</p> <p>Staplers, wound (4)</p> <p>Suction apparatus</p> <p>Transport Stretchers</p> <p>Venodyne Doppler</p> <p>Wheelchairs</p> <p>Supplies</p> <p>ABD bandage pads, sterile (50)</p> <p>Alcohol pads (50)</p> <p>Applicator, cotton tipped (85)</p> <p>Bag, Ambu (adult) Disposable (2)</p> <p>Bag, Ambu (infant) Disposable (2)</p> <p>Bag, disposable Plastic (20)</p> <p>Bag, Disposable, Biohazard (20)</p> <p>Bag-Valve-Mask w/adult and peds masks - adult 1600 ml reservoir (1)</p> <p>BandAids (50)</p> <p>Basins, bath (50)</p> <p>Bathing supply, prepackaged (e.g. Bath in a Bag (TM)) (50)</p> <p>Batteries, AA for flashlights (6)</p> <p>Bed Pan (20)</p>		<p>Suction apparatus</p> <p>Transport Stretchers</p> <p>Venodyne Doppler</p> <p>Wheelchairs</p> <p>Supplies</p> <p>ABD bandage pads, sterile (50)</p> <p>Alcohol pads (50)</p> <p>Applicator, cotton tipped (85)</p> <p>Bag, Ambu (adult) Disposable (2)</p> <p>Bag, Ambu (infant) Disposable (2)</p> <p>Bag, disposable Plastic (20)</p> <p>Bag, Disposable, Biohazard (20)</p> <p>Bag-Valve-Mask w/adult and peds masks - adult 1600 ml reservoir (1)</p> <p>BandAids (50)</p> <p>Basins, bath (50)</p> <p>Bathing supply, prepackaged (e.g. Bath in a Bag (TM)) (50)</p> <p>Batteries, AA for flashlights (6)</p> <p>Bed Pan (20)</p> <p>Blanket, infant cotton (30)</p> <p>Blanket, poly (50)</p> <p>Blanket, thermal (24)</p>
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<p>Blanket, infant cotton (30)</p> <p>Blanket, poly (50)</p> <p>Blanket, thermal (24)</p> <p>Blood Pressure Device Adult including sphygmomometer (8)</p> <p>Blood Pressure Device Child including sphygmomometer (4)</p> <p>Blood Pressure Infuser Bags (25)</p> <p>Bracelets, Medical ID Adult vinyl band (50)</p> <p>Bracelets, Medical ID Pediatric vinyl band (30)</p> <p>Bungy Cords 20 pc assortment (10)</p> <p>Carafes - 1 liter (30)</p> <p>Cart, supply (3)</p> <p>Catheters, intraosseous module blue (pediatric use) (1)</p> <p>Catheters, suction (20)</p> <p>Chair, Folding (5)</p> <p>Chest Tubes, varied sizes 12 to 36F</p> <p>Chux protective pads (1200)</p> <p>Clip Boards (50)</p> <p>Commode (2)</p> <p>Connector, 5 in 1 (8)</p> <p>Cots, Portable Collapsible (50)</p> <p>Curtains, privacy (wheeled) (25)</p>		<p>Blood Pressure Device Adult including sphygmomometer (20)</p> <p>Blood Pressure Device Child including sphygmomometer (4)</p> <p>Blood Pressure Infuser Bags (25)</p> <p>Bracelets, Medical ID Adult vinyl band (50)</p> <p>Bracelets, Medical ID Pediatric vinyl band (30)</p> <p>Bungy Cords 20 pc assortment (10)</p> <p>Carafes - 1 liter (30)</p> <p>Cart, supply (3)</p> <p>Catheters, intraosseous module blue (pediatric use) (1)</p> <p>Catheters, suction (20)</p> <p>Chair, Folding (5)</p> <p>Chest Tubes, varied sizes 12 to 36F</p> <p>Chux protective pads (1200)</p> <p>Clip Boards (50)</p> <p>Commode (2)</p> <p>Connector, 5 in 1 (8)</p> <p>Cots-Stretchers/Beds (50)</p> <p>Curtains, privacy (wheeled) (25)</p> <p>Diapers, disposable (38)</p> <p>Diapers, disposable, latexfree Ad (17)</p> <p>Disinfectants/detergent</p>
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<p>Diapers, disposable (38)</p> <p>Diapers, disposable, latexfree Ad (17)</p> <p>Disinfectants/detergent</p> <p>Disposable plastic BP covers (200)</p> <p>Drinking cups (50)</p> <p>EKG Electrodes (50)</p> <p>Emesis Basin (40)</p> <p>Facial tissue, individual ptnt bx (50)</p> <p>Feeding tubes, pediatric</p> <p>- 5 French (5)</p> <p>- 8 French (5)</p> <p>Foley Catheters - Kits, varied sizes 14 to 22F (includes drainage bag) (50)</p> <p>Form, Laboratory, Diagnostic (100)</p> <p>Form, Triage (100)</p> <p>Gauze pads, non-sterile, 4x4 (400)</p> <p>Gloves Large, powder free (100)</p> <p>Gloves Medium, powder free (250)</p> <p>Glucometer (1)</p> <p>Glucometer test strips (2)</p> <p>Gown, Patient, disposable Adult (50)</p> <p>Gown, Patient, disposable Peds (30)</p> <p>Gown, Provider Open back, Lrg (30)</p> <p>Glucometer (1)</p> <p>Glucometer test strips (2)</p> <p>Gown, Patient, disposable Adult (50)</p> <p>Gown, Patient, disposable Peds (30)</p> <p>Gown, Provider Open back, Lrg (30)</p>		<p>Disposable plastic BP covers (200)</p> <p>Drinking cups (50)</p> <p>Emesis Basin (40)</p> <p>Facial tissue, individual ptnt bx (50)</p> <p>Feeding tubes, pediatric</p> <p>- 5 French (5)</p> <p>- 8 French (5)</p> <p>Foley Catheters - Kits, varied sizes 14 to 22F (includes drainage bag) (50)</p> <p>Form, Laboratory, Diagnostic (50)</p> <p>Gauze pads, non-sterile, 4x4 (400)</p> <p>Gloves Large, powder free (100)</p> <p>Gloves Medium, powder free (250)</p> <p>Glucometer (1)</p> <p>Glucometer test strips (2)</p> <p>Gown, Patient, disposable Adult (50)</p> <p>Gown, Patient, disposable Peds (30)</p> <p>Gown, Provider Open back, Lrg (30)</p> <p>Gown, Provider Open back, Med (21)</p> <p>Hamper, Soiled Linen w/ Holder (3)</p> <p>Hand Cleaner (waterless) (2)</p> <p>Intermittent IV access device (lock) (50)</p> <p>Intubation equipment with oral airways/ET tubes;</p>
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<p>Gown, Provider Open back, Med (21)</p> <p>Hamper, Soiled Linen w/ Holder (3)</p> <p>Hand Cleaner (waterless) (3)</p> <p>Intermittent IV access device (lock) (50)</p> <p>Intubation equipment with oral airways/ET tubes; adult & peds, 40 to 100mm (2 sets)</p> <p>IV catheters, 18g with protectocath guard (50)</p> <p>IV catheters, 20g with protectocath guard (50)</p> <p>IV catheters, 22g with protectocath guard (25)</p> <p>IV catheters, 24g with protectocath guard (25)</p> <p>IV fluid bags, D5 1/2NS, 1000cc (required by 40% of patients) (30L)</p> <p>IV fluid bags, NS, 1000cc (required by 60% of patients) (75L)</p> <p>IV fluid bags, lactated ringers, 1000 cc</p> <p>IV Set Selectable drop chamber (24)</p> <p>IV start kits (50)</p> <p>IV tubing w/ Buretrol drip set for peds (25)</p> <p>IV tubing w/ standard macrodrip for adults (50)</p> <p>Laboratory blood tubes, lavender, gold, green, pink (2 pks. of each)</p> <p>Lab vacutainers and adapters</p> <p>Light, Flashlight (3)</p> <p>Light, Headlamp (1)</p>		<p>adult & peds 40 to 100mm (2 sets)</p> <p>IV catheters, 18g with protectocath guard (50)</p> <p>IV catheters, 20g with protectocath guard (50)</p> <p>IV catheters, 22g with protectocath guard (25)</p> <p>IV catheters, 24g with protectocath guard (25)</p> <p>IV fluid bags, D5 1/2NS, 1000cc (required by 40% of patients) (30L)</p> <p>IV fluid bags, NS, 1000cc (required by 60% of patients) (75L)</p> <p>IV Set Selectable drop chamber (24)</p> <p>IV start kits (50)</p> <p>IV tubing w/ Buretrol drip set for peds (25)</p> <p>IV tubing w/ standard macrodrip for adults (50)</p> <p>Laboratory blood tubes, lavender, gold, green, pink (2 pks. of each)</p> <p>Lab vacutainers and adapters</p> <p>Light, Flashlight (2)</p> <p>Light, Headlamp (1)</p> <p>Light, pen (7)</p> <p>Linens (sheets, towels, pillowcases) (50)</p> <p>Lubricant, Water soluble (50)</p> <p>Mask, N-95 particulate respirators w/cool flow valve (200)</p> <p>Mask, oxygen - nonrebreather, adult (20)</p>
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<p>Light, pen (8)</p> <p>Linens (sheets, towels, pillowcases) (50)</p> <p>Lubricant, Water soluble (50)</p> <p>Mask, N-95 particulate respirators w/cool flow valve (200)</p> <p>Mask, oxygen - nonrebreather, adult (20)</p> <p>Mask, oxygen - nonrebreather, pediatric (10)</p> <p>Mask, Oxygen, Adult Simple Mask w/7' tubing (10)</p> <p>Mask, Oxygen, Pediatric Simple Mask w/7' tubing (5)</p> <p>Mattress Pads, Crib disposable (5)</p> <p>Medicine cups, 30ml, plastic (100)</p> <p>Morgue Kits, body bags (50)</p> <p>Name Badge & Holder (20)</p> <p>Nasal cannula, adult (40)</p> <p>Nasal cannula, pediatric (10)</p> <p>Nasogastric tubes - 18F (25)</p> <p>Needles, Butterfly, 23g (25)</p> <p>Needles, Butterfly, 25g (25)</p> <p>Needles, sterile 18g (100)</p> <p>Needles, sterile 21g (100)</p> <p>Needles, sterile 25g (100)</p> <p>Notebooks White, 100 pages (5)</p> <p>OB Kits (1)</p>		<p>Mask, oxygen - nonrebreather, pediatric (10)</p> <p>Mask, Oxygen, Adult Simple Mask w/7' tubing (10)</p> <p>Mask, Oxygen, Pediatric Simple Mask w/7' tubing (5)</p> <p>Mattress Pads, Crib disposable (5)</p> <p>Medicine cups, 30ml, plastic (100)</p> <p>Morgue Kits, bodybags (50)</p> <p>Name Badge & Holder (20)</p> <p>Nasal cannula, adult (40)</p> <p>Nasal cannula, pediatric (10)</p> <p>Nasogastric tubes - 18F (25)</p> <p>Needles, Butterfly, 23g (25)</p> <p>Needles, Butterfly, 25g (25)</p> <p>Needles, sterile 18g (100)</p> <p>Needles, sterile 21g (100)</p> <p>Needles, sterile 25g (100)</p> <p>Notebooks White, 100 pages (5)</p> <p>OB Kits (1)</p> <p>Pack, Ice Col-Press 1st Aid Kit Sz (5)</p> <p>Pack, Warm Solar-Pack (2)</p> <p>Paper Towels (25)</p> <p>Peds Cribs/Beds (5)</p> <p>Pens, Standard Bic round Stick (20)</p>
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<p>Pack Ice Col-Press 1st Aid Kt Sz (15)</p> <p>Pack, Warm Solar-Pack (8)</p> <p>Paper Towels (25)</p> <p>Peds Cribs/Cots (5)</p> <p>Pens, Standard Bic round Stick (20)</p> <p>Pillows, disposable (50)</p> <p>Providone-iodine bottles, 12 oz (3)</p> <p>Providone-iodine prep pads</p> <p>Providone-iodine spray</p> <p>Privacy Screen, folding (1)</p> <p>Restraints, Extremity, soft - adult (25)</p> <p>Saline for injection 10cc bottle (50)</p> <p>Sanitary pads (OB pads) (25)</p> <p>Scalpels #11 (20)</p> <p>Scalpels #15 (20)</p> <p>Scissors, Lister bandage 7 1/4" (4)</p> <p>Sharps Containers, Biohazard 2 gal. Transportable (5)</p> <p>Sheets, Stretcher tissue poly (50)</p> <p>Single Use Shielded Lancets (25)</p> <p>Soap, Liquid Metrex, Vionex, antimicrobial, bag in box (2)</p> <p>Spectacles, Eye Protective clear, wraparound (10)</p>		<p>Pillows, disposable (50)</p> <p>Providone-iodine bottles, 12 oz (3)</p> <p>Providone-iodine prep pads</p> <p>Providone-iodine spray</p> <p>Privacy Screen, folding (1)</p> <p>Restraints, Extremity, soft - adult (25)</p> <p>Saline for injection 10cc bottle (50)</p> <p>Sanitary pads (OB pads) (25)</p> <p>Scissors, Lister bandage 7 1/4" (1)</p> <p>Sharps Containers, Biohazard 2 gal. Transportable (5)</p> <p>Sheets, Stretcher tissue poly (50)</p> <p>Single Use Shielded Lancets (25)</p> <p>Soap, Liquid Metrex, Vionex, antimicrobial, bag in box (1)</p> <p>Spectacles, Eye Protective clear, wraparound (10)</p> <p>Stand, IV 4 leg (20)</p> <p>Stethoscope, disposable, single-head Dark Blue, Adult (3)</p> <p>Syringes, 20cc, luer lock (50)</p> <p>Syringes, 10cc, luer lock (50)</p> <p>Syringes, 3cc, luer lock, w/ 21g 1.5" needle (200)</p> <p>Syringes, catheter tip 60cc (25)</p> <p>Syringes, Insulin (15)</p>
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<p>Splints (wrist, collar, arm)</p> <p>Stand, IV 4 leg (20)</p> <p>Stethoscope, disposable, single-head Dark Blue, Adult (3)</p> <p>Syringes, 20cc, luer lock (50)</p> <p>Syringes, 10cc, luer lock (50)</p> <p>Syringes, 3cc, luer lock, w/ 21 g 1.5" needle (200)</p> <p>Syringes, catheter tip 60cc (25)</p> <p>Syringes, Insulin (15)</p> <p>Syringes, TB (25)</p> <p>Table, Folding Gray (1)</p> <p>Tape, Duct (1)</p> <p>Tape, Medical hypoallergenic cloth tape (2)</p> <p>Tape, silk - 1 inch (14)</p> <p>Tape, silk - 2 inch (8)</p> <p>Thermometer, Disposable Strips oral/axillary (50)</p> <p>Toilet Paper (25)</p> <p>Tongue depressor (120)</p> <p>Tourniquet latex free (5)</p> <p>Trailer Well Cargo cargo trailer (1)</p> <p>Tubes, gastro/Salem sumps (20)</p> <p>Tubex [TM] pre-filled syringe holders (10)</p> <p>Tubing – suction, connector (10)</p>		<p>Syringes, TB (25)</p> <p>Table, Folding Gray (1)</p> <p>Tape, Duct (1)</p> <p>Tape, Medical hypoallergenic cloth tape (2)</p> <p>Tape, silk - 1 inch (14)</p> <p>Tape, silk - 2 inch (8)</p> <p>Thermometer, Disposable Strips oral/axillary (250)</p> <p>Toilet Paper (25)</p> <p>Tongue depressor (120)</p> <p>Tourniquet latex free (5)</p> <p>Tubex [TM] pre-filled syringe holders (10)</p> <p>Tubing – suction, connector (10)</p> <p>Tubing, oxygen – with connector (40)</p> <p>Tubing, suction, 10F (10)</p> <p>Urinal, female Plastic (2)</p> <p>Urinal, male Plastic (3)</p> <p>Washcloths, disposable (500)</p> <p>Water container, 1 gallon potable (125)</p> <p>Water, bottled 1 liter (for mixing ORT) (50)</p> <p>Wrench, Oxygen tank (2)</p> <p>Yankaur Suction Catheter (10)</p>
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Tubing, oxygen – with connector (40)

Tubing, suction, 10F (10)

Urinal, female Plastic (2)

Urinal, male Plastic (3)

Washcloths, disposable (500)

Water container, 1 gallon potable (125)

Water, bottled 1 liter (for mixing ORT) (50)

Yankaur Suction Catheter (10)

APPENDIX G

Medical Reserve Corps

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Medical Reserve Corps

The Medical Reserve Corps is a Federal program created in 2002 in the wake of 9/11. The events of September 11, 2001 had demonstrated both the willingness of many Americans to volunteer their assistance and the difficulties of using public health and medical volunteers in emergencies. While these potential volunteers in the fields of medicine and public health may have had the necessary skills and knowledge, they could not be deployed to help with the aftermath of 9/11 because they were not identified, credentialed or trained in advance. The MRC was established to provide a mechanism for recruiting, training and deploying these valuable volunteers.

MRC units are now made up of locally based, medical and public health volunteers who can assist their communities during emergencies, such as an influenza epidemic, a chemical spill, or an act of terrorism. MRC volunteers also offer education and prevention services to improve the public health infrastructure of their neighborhoods and communities. The program is headquartered in the Office of the Surgeon General.

Jurisdictions in the National Capital Region are in various stages of developing local MRCs as their function and utility are becoming apparent. In practice, the local MRCs

- Are made up of both medical and non-medical volunteers (although a few jurisdictions have recruited only medical personnel to date)
- Provide a pro-active and mutually beneficial outlet for concerned citizens
- Provide pre-event and just-in-time training
- Provide a fairly discrete and fully developed message, as compared to other risk communications in health response
- **Are the only means for understaffed public health departments to implement mass-casualty plans (staffing medical dispensing sites, coping with terrorist attacks or natural epidemics, etc.)**

Fairfax County alone has been able to bolster a staff of 250 Public Health responders with *more than 3,000* active volunteers. They are also utilizing these volunteers in non-emergency situations; currently, to provide Public Health messaging and build upon community relations. In Fairfax, about 60-70% of MRC volunteers do not have a medical background but will still be filling vital roles in emergency response. Many of the volunteers are being trained to fulfill management roles in Public Health response.

For more information about the Medical Reserve Corps as a federal program, go to <http://www.medicalreservecorps.gov/>

NCR Health and Medical Volunteer Programs (MRC) Matrix

Affiliation	Alexandria		Arlington		Fairfax		Loudoun		Montgomery		Prince George's		Prince William		District of Columbia		Maryland		Virginia	
	Recognized MRC:	No	Yes	Health Dept.	Health Dept.	Yes	Health Dept.	Yes	Health Dept.	Yes	Volunteer Ctr.	Yes	Health Dept.	No MRC.	DC Med. Society	Yes	Health Dept. (DHMH)	Both ^I		
Governing agency:	Health Dept.	Health Dept.	Health Dept.	Health Dept.	Health Dept.	Health Dept.	Health Dept.	Health Dept.	Health Dept.	Volunteer Ctr.	Health Dept.	Health Dept.	Working on developing volunteer group.	DC Med. Society	Health Dept.	Health Dept. (DHMH)	Health Dept. (+1 university)			
Additional agency coordination:	EMA; Volunteer Bureau of Alex.; Citizen Corps ^A	Citizen Corps; Volunteer Office	Citizen Corps; Volunteer Office	Citizen Corps; MRC Council ^B	Citizen Corps; MRC Council ^B	Citizen Corps; MRC Council ^B	Citizen Corps; MRC Council ^B	Citizen Corps; MRC Council ^B	Citizen Corps; MRC Council ^B	Health Dept; Citizen Corps ^F	Citizen Corps; Volunteer Center	Citizen Corps; Volunteer Center	Citizen Corps; Volunteer group.	Health Dept.	Citizen Corps, etc	Citizen Corps, etc	Citizen Corps			
Staff mass dispensing sites?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	Yes	Yes	Most			
Ongoing Public Health promotion?	Yes, task force	Yes, task force	outreach to medical offices	Yes ^C	Yes ^C	Yes ^C	Yes ^C	Yes ^C	Yes ^C	Yes, where requested	Yes, where requested	Yes, where requested	Yes, where requested	Yes	Yes	Yes	Most			
Support acute medical care?	Yes	Yes	No	No	No	No	No	No	Yes ^G	Yes, where requested	Yes, where requested	Yes, where requested	Yes, where requested	Yes	Yes	Yes	No ^J			
Other Public Health surge response: (epi invest., quarantine) Coordinated with PH emergency planner?	Not yet	Not yet	assist epi, quarantine, public info	possible, but not planned at this time ^D	possible, but not planned at this time ^D	possible, but not planned at this time ^D	possible, but not planned at this time ^D	possible, but not planned at this time ^D	Yes ^G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Some			
Medical (M):	168 (incl 41 @HD)	168 (incl 41 @HD)	110	880	880	400	400	400	360	100	100	100	-	211	4,700	4,700	>4000			
Non-Medical (NM):	146 (incl 83 @HD)	146 (incl 83 @HD)	-	2157	2157	120	120	120	5	25	25	25	-	170	n/a	n/a	>1000			
Target goal?	250 M, 500 NM	250 M, 500 NM	250 M, 400 NM	13,000	13,000	2000	2000	2000	1000	9000	9000	9000	-	1000	As many as can	As many as can ^K				
Credentialed:	197	197	?	Verify licenses when applicable	Verify licenses when applicable	210	210	210	360	51	51	51	-	99	Yes	Yes				
Trained	197	197	103	271; 1128	271; 1128	210	210	210	?	100	100	100	-	383	Yes	Yes				
Trainings used:	Local HD developed courses	Local HD developed courses	Local HD program/GW project SUVs	Currently live; hope augment with online	Currently live; hope augment with online	Local HD developed courses	Local HD developed courses	Local HD developed courses	Listed below ^H	Local HD developed courses	Local HD developed courses	Local HD developed courses	-	Classroom, Exercises, Drills	Classroom, On-line, Exercises & Drills	Classroom, On-line, Exercises & Drills	Varies ^L			

" ? " = Still collecting information from jurisdiction / agency

^A Meet occasionally with Citizen Corps leadership in Alexandria; the Volunteer Bureau of Alexandria frequently provides us with volunteers; we meet regularly with Emergency Management; we have volunteers who are meeting with other community agencies.

^B Participate in Citizen Corps Council; launching on 3-29 an MRC Leadership Council which will have representation from Schools, Fire, Citizen Corps, Red Cross, and Volunteer Fairfax along with a cross section of our MRC leaders.

^C A subset (~10%) of volunteers participate in Community Health Partners who distribute health promotion literature to the public

^D See <Sheet 2 - Fairfax County by Role>

^F We meet on a regular basis with the Montgomery County Health Department, the Volunteer Center chairs the Citizen Corps Council, we are represented on at the EOC during emergencies and coordinate all our activities with the County Office of Homeland Security, the Emergency Action Team and the Mental Health Corps.

^G We recruit volunteers for the local no cost and low cost private non profit health clinics; we are working with the Federal Public Health Service to utilize administrative medical personnel in local health clinics in Montgomery County

^H Smallpox Vaccination quarterly, training orientations bi-annually, several stress reduction and emergency preparedness trainings throughout the year. We also publicize local low cost trainings from Montgomery and other jurisdictions.

^I Virginia has 15 official MRCs (3 unfunded) and several unofficial volunteer groups in the early stages of development. VDH is encouraging them to become 'MRC' designated for liability and future funding purposes

^J But if credentialed and priveledged, should be aware that they may be called to work in and for the hospitals during an emergency.

^K But targeting a well trained, sustained group of team leaders who can provide "just in time training" for the masses

^L Basic orientation programs on MRCs and volunteers (covering liability, supervision, org structure, etc.), basic public health awareness, basic personal preparation, including some use of equipment and PPE, basic incident command structure, basic overview of disasters (what they are) and then most have role specific training for various types of volunteers. We plan to set up our statewide MRC minimal guidelines for training, based on the CDC competencies.

Fairfax County

Week of 03/28/05 - 04/04/05

By Volunteer Role

Volunteer Role	Previous Total (03/28/05)	Added this week	Total for 04/04/05	Number Required	Difference
Administrative Assistant	150	1	151	384	233
ASL Interpreter	16	0	16	96	80
Data Entry Specialist	323	1	324	1152	828
Data Entry Unit Leader	37	0	37	96	59
Dispensing Site Assistant	886	2	888	6144	5256
Flow Control Unit Leader	101	0	101	96	-5
Greeter (Counselor)	191	-1	190	288	98
Incident Coordinator	58	0	58	96	38
Language Interpreter	139	-1	138	960	822
Licensed Practical Nurse	5	0	5	N/A	N/A
Medical Director	73	-1	72	96	24
Mental Health Practitioner	53	0	53	288	235
Nurse Practitioner	60	0	60	96	36
Other	22	3	25	N/A	N/A
Pharmacist	53	0	53	96	43
Pharmacy Technician	1	1	2	96	94
Physician	92	0	92	288	196
Registered Nurse	466	3	469	1920	1451
Registered Nurse Unit Leader	80	-1	79	480	401
Safety Officer	20	0	20	96	76
Special Needs Assistant	119	0	119	288	169
Support Branch Director	33	0	33	96	63
Support Branch Deputy Director	29	0	29	96	67
Volunteer Coordinator	93	0	93	96	3
Totals:	3,100	7	3,107	13344	10267

Cumulative

Training	
Attended Orientation to date:	1,125
Attended Job-specific to date:	415

Total Volunteers
3,107

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APPENDIX H

15 Threat Scenarios

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PLANNING SCENARIOS

Executive Summaries

Created for Use in National, Federal, State,
and Local Homeland Security Preparedness Activities

The Homeland Security Council

David Howe, Senior Director for Response and Planning

July 2004

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Introduction

The Homeland Security Council (HSC) – in partnership with the Department of Homeland Security (DHS), the federal interagency, and state and local homeland security agencies – has developed fifteen all-hazards planning scenarios for use in national, federal, state, and local homeland security preparedness activities. These scenarios are designed to be the foundational structure for the development of national preparedness standards from which homeland security capabilities can be measured. While these scenarios reflect a rigorous analytical effort by federal, state, and local homeland security experts, it is recognized that refinement and revision over time may be necessary to ensure the scenarios remain accurate, represent the evolving all-hazards threat picture, and embody the capabilities necessary to respond to domestic incidents.

This document includes executive summaries for the fifteen scenarios, and a separate document contains the complete scenario text.

General Considerations for the Scenarios:

The scenarios have been developed in a way that allows them to be adapted to local conditions throughout the country. Although certain areas have special concerns – continuity of government in Washington, D.C.; viability of financial markets in New York; and trade and commerce in other major cities – every part of the country is vulnerable to one or more major hazards.

Because the attacks could be caused by foreign terrorists; domestic radical groups; state-sponsored adversaries; or in some cases, disgruntled employees, the perpetrator has been named, the Universal Adversary (UA). The focus of the scenarios is on response capabilities and needs, not threat-based prevention activities.

Since these scenarios were compiled to be the minimum number necessary to test the range of response capabilities and resources, other hazards were inevitably omitted. Examples of other potentially high-impact scenarios include nuclear power plant incidents¹, industrial and transportation accidents, and frequently occurring natural disasters. These either have well-developed and tested response plans, and/or the response would be a subset of the requirements for scenarios contained in this set.

Detailed assumptions for each scenario are provided in the full-text of this document but are not provided in this executive summary.

Intelligence Disclaimer –

While the intelligence picture developed as part of each scenario generally reflects suspected terrorist capabilities and known tradecraft, the Federal Bureau of Investigation (FBI) is unaware

¹ A severe incident at a nuclear power plant, whether or not it is terrorist-initiated, could result in a release of radioactive materials to the environment with adverse consequences to public health. Scenarios for such severe incidents have not been included in this scenario set because: (a) current federal regulations from the Nuclear Regulatory Commission and the DHS Federal Emergency Management Agency (FEMA) mandate robust emergency planning and preparedness for each nuclear plant to include the full range of response organizations; and (b) scenarios for nuclear plants cannot be generically extrapolated to other types of facilities (e.g., chemical plants).

of any credible intelligence that indicates that such an attack is being planned, or that the agents or devices in question are in possession of any known terrorist group.

Ranking of Scenarios –

Various schemes have been used in the past to rank scenarios based on probability, number of casualties, extent of property damage, economic impact, and social disruption. Because the scenarios in this set were developed to test the full range of response capabilities and resources – and to assist federal, state, and local governments as well as the private sector in preparedness – they have not been ranked. Each jurisdiction or organization should apply its own priorities, based on its responsibilities within the domestic incident management structure.

Multiple Events –

There is a high probability that multiple incidents will occur simultaneously. When scoping resource requirements, organizations should always consider the need to respond to multiple incidents of the same type and multiple incidents of different types, at either the same or other geographic locations. These incidents will invariably require the coordination and cooperation of homeland security response organizations across multiple regional, state, and local jurisdictions.

The Homeland Security Advisory System –

The scenarios do not specify changes in the levels of the Homeland Security Advisory System (HSAS). However, in all scenarios other than natural disasters, it is anticipated that the alert level would increase. This increases the nation's ability to respond to the current attack, reduces the vulnerability to future attacks, and helps citizens prepare to protect themselves. At higher alert levels, the HSAS has increased resource demands and can also have national economic impacts.

The “Worried Well” –

In most incidents, citizens will seek medical treatment even though they may not be injured by the incident. For example, in the World Trade Center incident on 9/11/01, the uninjured who sought medical treatment was approximately fifteen times the number of people who presented for medical treatment due to smoke inhalation; and in the Tokyo subway attack it was five times the number of victims experiencing chemical poisoning. For planning purposes, most experts calculate a ratio of ten-to-one.

Infrastructure Impact –

The effect of disasters on national, state, and local transportation, communication, medical, and utility infrastructure will have a considerable effect on response strategies. As on 9/11, when the entire civilian air transportation system and much of the national telecommunications system were shut down or disabled, a terrorist incident may have repercussions that affect critical infrastructures necessary for coherent emergency response. These critical networks must be layered and properly coordinated across both civilian and military sectors to ensure the continuity of critical infrastructure support for responding jurisdictions.

Economic Impact –

Catastrophic disasters, depending upon the type, scope, and magnitude of the disaster incident, could threaten the economic sustainability of the communities affected and may cause severe

disruption and long-term economic damage. Extreme disaster incidents can generate cascading economic situations extending outside the immediate community. Even in moderate disasters, of all businesses that close following a disaster, more than 43% never reopen, and an additional 29% close permanently within 2 years². The American Planning Association notes, “Economic recovery is quite likely the most serious issue facing most communities in the post-disaster period, and almost certainly the central issue in every major disaster.”³

Environmental Impact –

Catastrophic natural and manmade disasters and terrorist attacks can result in extreme environmental impacts that challenge government and community recovery time. Long after the emergency phase subsides, contamination from disasters may remain, consisting of chemical, biological, or radiological materials. While decontamination technologies may be well established for some types of contamination, others are only moderately effective – some contaminants, especially radionuclides, are very difficult and costly to remediate. While some decontamination techniques may be effective in small sites, these techniques may not be suited for decontaminating expansive areas of varying physical characteristics. Evacuation and relocation during cleanup and restoration activities can result in significant business loss and failure, leading to local and regional economic downturn. In addition, agricultural and industrial products from an area contaminated, or thought to be contaminated, can generate impacts that extend within a region and beyond.

International Dimensions –

It is important to underline the significant international dimensions that arise in connection with some of the more damaging and devastating scenarios in which significant loss of life and property, together with the possibility of foreign-directed terrorism, are involved. First, there is the hemispheric dimension of effects on U.S. relations with Canada and Mexico in terms of cross-border trade, transit, law enforcement coordination, and other key issues. Second, there is the immediate treaty connection the United States has with other North Atlantic Treaty Organization (NATO) allies if the United States comes under attack. Third, there is the significant lobbying the United States will undertake at the United Nations (UN) to articulate American needs and interests. In addition to humanitarian and law enforcement assistance from NATO allies, other nations may contribute special equipment in order to meet other necessities. Instances where a disaster or terrorist attack has disrupted major urban centers and international transit/trade routes through U.S. cities will typically require significant coordination with the State Department to ensure all economic, trade, commercial, consular, military cooperative, and humanitarian assistance is rendered as needed.

The State Department plays several key roles in post-disaster situations. It assists foreign citizens affected by the incident. It identifies the specific needs of affected U.S. areas where foreign offers of assistance can be mediated and arranged. Moreover, in cases where explicit terrorist activities may have occurred, the State Department is a leader in facilitating the investigations abroad needed to determine the origins of the attack, in pursuing diplomatic and follow-up

² Institute for Business and Home Safety, at www.ibhs.org/business_protection.

³ *Planning for Post-Disaster Recovery and Reconstruction* (1998), American Planning Association–Federal Emergency Management Agency, Planning Advisory Service Report No. 483/484, p. 53.

policies related to finding the guilty parties abroad, and in rendering coordinated international assistance to U.S. recovery efforts.

Common Response Threads:

Media Access and Support –

The support and cooperation of media in informing and protecting citizens is a critical aspect of emergency response. In many cases, media sources represent the best or only source of information available during the early stages of an incident. Cultivating good working relationships with the media provides opportunities to advise the public of important safety and health guidance and information and corrected misinformation, as well as to obtain critical information from news sources at the scene. Likewise, consistent public service guidance and information from emergency management officials to media sources are vital to reducing the probability of injury or illness and for alleviating citizen anxiety during the emergency.

The Importance of Planning for Continuity of Operations –

The scenarios reinforce the need for governments and the private sector to make preparations to continue their essential operations in an environment in which primary staff and facilities are unavailable. This includes the need to backup key records and systems.

The Need for Capability-Based Planning –

The scenarios emphasize the need for domestic incident preparedness to proceed through a capabilities-based approach. Although it is impossible to determine which major incident will occur next, examination of the scenarios leads to certain common functions that must be accomplished: the need for response organizations to move quickly and in a coordinated manner, the requirement to quickly treat mass casualties, and the need to temporarily house large numbers of people. Other considerations, such as treating infected animals or reconfiguring computer systems, are more incident-dependent.

Mission Areas:

The following Mission Areas were used to assist in scoping the response requirements generated by the scenarios.⁴ The full-text document contains detailed information for each Mission Area, and this executive summaries document highlights actions to be taken under each Mission Area.

<i>Prevention/Deterrence/Protection</i> –	The ability to prevent, deter, or protect against terrorist actions
<i>Emergency Assessment/Diagnosis</i> –	The ability to detect an incident, determine its impact, classify the incident, conduct environmental monitoring, and make government-to-government notifications
<i>Emergency Management/Response</i> –	The ability to direct, control, and coordinate a response; provide emergency public information to the population at risk and the population at large; and manage resources – this outcome includes direction and control through the Incident Command System (ICS), Emergency Operations Center (EOC), and Joint Information Center (JIC)
<i>Incident/Hazard Mitigation</i> –	The ability to control, collect, and contain an incident at its source and to mitigate the magnitude of its impact; this outcome also includes all response tasks conducted at the incident scene except those specifically associated with victim care
<i>Public Protection</i> –	The ability to provide initial warnings to the population at large and the population at risk, notifying people to shelter-in-place or evacuate; provide evacuee support (e.g., transportation for evacuees, reception center, sand shelters); protect schools and special populations; and manage traffic flow and access to the affected area
<i>Victim Care</i> –	The ability to treat victims at the scene, transport patients, treat patients at a medical treatment facility, track patients, handle and track human remains, and provide tracking and security of patients’ possessions and evidence
<i>Investigation/Apprehension</i> –	The ability to investigate the cause and source of the attack; prevent secondary attacks; and identify, apprehend, and prosecute those responsible
<i>Recovery/Remediation</i> –	The ability to restore essential services, restore businesses and commerce, cleanup the environment and render the affected area safe, compensate victims, provide long-term mental health and other services to victims and the public, and restore a sense of well-being in the community

⁴ Department of Homeland Security, Office for Domestic Preparedness: *Homeland Security Exercise and Evaluation Program*, October 2003.

Scenario 1: Nuclear Detonation – 10-Kiloton Improvised Nuclear Device

Executive Summary

Casualties	Can vary widely
Infrastructure Damage	Total within radius of 0.5 to 1.0 mile
Evacuations/Displaced Persons	450,000 or more
Contamination	Approximately 3,000 square miles
Economic Impact	Hundreds of billions of dollars
Potential for Multiple Events	No
Recovery Timeline	Years

Scenario Overview:

General Description –

In this scenario, terrorist members of the Universal Adversary (UA) group assemble a gun-type nuclear device using highly enriched uranium (HEU) – used here to mean weapons-grade uranium – stolen from a nuclear facility located in the former Soviet Union. The nuclear device components are smuggled into the United States. The 10-kiloton nuclear device is assembled near a major metropolitan center. Using a delivery van, terrorists transport the device to the central business district of a large city and detonate it. Most buildings within 1,000 meters (~ 3,200 feet) of the detonation are severely damaged. Injuries from flying debris (missiles) may occur out to 6 kilometers (~ 3.7 miles). An Electromagnetic Pulse (EMP) damages many electronic devices within about 5 kilometers (~ 3 miles). A mushroom cloud rises above the city and begins to drift east-northeast.

Geographical Considerations/Description –

This scenario postulates a 10-kiloton nuclear detonation in a large metropolitan area. The effects of the damage from the blast, thermal radiation, prompt radiation, and the subsequent radioactive fallout have been calculated, based on a detonation in Washington, D.C. (details are not provided in this executive summary but are presented in the full-text version in Appendix 1-A). However, the calculation is general enough that most major cities in the United States can be substituted in a relatively straightforward manner. If the incident happened near the U.S. border, there would be a need for cooperation between the two border governments. Additionally, the IND attack may warrant the closure of U.S. borders for some period of time. If the detonation occurs in a coastal city, the fallout plume may be carried out over the water, causing a subsequent reduction in casualties. On the other hand, the surrounding water will likely restrict the zones that are suitable for evacuation. Bridges and tunnels that generally accompany coastal cities will restrict the evacuation, causing delay and an increase in the radioactive dose that evacuees receive. This delay may be substantial and the resulting dose increase may drive a decision to shelter-in-place or evacuate-in-stages.

Timeline/Event Dynamics –

The response timeline will begin the instant the detonation occurs. Initially, only survivors in the immediate area will conduct rescue and lifesaving activities. Later (minutes to hours), rescue teams will begin to arrive and provide assistance. With the current state of education, training, and equipment, it is likely that many of these responders will subject themselves to very large (perhaps incapacitating or fatal) doses of radiation. As various command posts are setup (which may take hours to days), the response will become more coordinated.

For a nuclear detonation, the actual occurrence of injuries does not stop when the immediate blast effects have subsided. The most critical components of the post-detonation response may not be the lifesaving efforts that assist the victims directly injured by the detonation. Instead, it is likely that the most effective lifesaving activities will be those that address the evacuation or sheltering-in-place decisions for the potential victims in the immediate fallout path, the effective communication of instructions to the affected population, and the efficient decontamination of the evacuated population.

Secondary Hazards/Events –

The detonation will cause many secondary hazards. The intense heat of the nuclear explosion and other subsequent causes will produce numerous fires located throughout the immediate blast zone. Damaged buildings, downed power and phone lines, leaking gas lines, broken water mains, and weakened bridges and tunnels are just some of the hazardous conditions that will need to be assessed. Depending on the type of industries present (such as chemical or petroleum production, industrial storage facilities, and manufacturing operations), there could be significant releases of hazardous materials.

Another secondary effect of a nuclear explosion is the EMP that will be produced by the ionization and subsequent acceleration of electrons from the air and other materials by the intense radiation of the detonation. This EMP is a sharp, high-voltage spike that radiates out from the detonation site. It has the potential to disrupt the communication network, other electronic equipment, and associated systems within approximately a 5-kilometer (~ 3-mile) range from the 10-kiloton ground blast.

There likely will be significant damage to the general public support infrastructure with potentially cascading effects. These systems include transportation lines and nodes (e.g., air, water, rail, highway); power generation and distribution systems; communications systems; food distribution; and fuel storage and distribution. There will be concerns about the safety and reliability of many structures (e.g., dams, levees, nuclear power plants, hazardous material storage facilities). Structures may be damaged that are used to provide essential services (e.g., hospitals, schools).

Key Implications:

A full description of the fatalities and injuries for a nuclear detonation is difficult and complicated. There will be casualties directly associated with the blast, which will cause “translation/tumbling” (the human body being thrown) and subsequent impacts of people and other objects. A nuclear detonation will also produce a great deal of thermal (heat) energy that

will cause burns to exposed skin (and eyes). There are two general “categories” of nuclear radiation produced in a detonation. First is the so-called “prompt” nuclear radiation, arbitrarily defined as being emitted within the first minute – it is actually produced as the device detonates or shortly thereafter. For a 10-kiloton blast, this radiation may expose unprotected people within a distance of a few kilometers (a couple of miles) to extremely large gamma ray and/or neutron doses. In addition, a detonation of a nuclear device near the surface of the ground will result in a great deal of fallout (in the form of dirt particles) that is radioactively contaminated. This fallout will settle out of the radioactive cloud over a period of minutes to weeks. By far, the most dangerously radioactive fallout will be deposited near the detonation site and will happen within the first couple of hours after detonation. Radioactive fallout will exponentially decay with time, but may expose many people to large doses and will certainly contaminate large areas of land for years. Many fatalities and injuries will result from a combination of these various effects.

The largest radiation concerns following an IND incident will be the “prompt” radiation (gamma ray and neutron) and the gamma dose received from the “ground shine” (radioactive particles deposited on the ground) as people are evacuated from the fallout areas. These effects are likely to have significantly larger impacts on the population than internal doses. Internal doses tend to expose the body to relatively small radiation doses over a long period of time, which produces different effects than large radiation doses received during a short period of time.

As the distance from ground zero increases past 20 kilometers (~ 12 miles), the injuries due to acute radiation exposure (from prompt radiation and the subsequent fallout) will decrease, and lower level contamination, evacuation, and sheltering issues will become the major concern. In general, at distances greater than 250 kilometers (~ 150 miles) from ground zero of a 10 kiloton nuclear detonation, acute health concerns will not be a significant issue. However, contamination of people and the environment will still be a concern.

Years later, there will still be health consequences in the form of increased probabilities of cancers in the exposed population. The number of these cancers will likely run into the thousands and will extract a large human, social, and financial cost.

It is likely that the blast and subsequent fires will destroy all buildings in the immediate area of the detonation. Historically, decontamination of sites involves the removal of all affected material, so most buildings in the immediate downwind fallout path will likely have to be destroyed in the decontamination effort. As the distance from the detonation site increases, the contamination level will decrease. At some distance, the buildings will not have to be destroyed and removed but will still require decontamination of all affected surfaces. This decontamination process will take years and will be extremely expensive. The decontamination will produce a far greater challenge and cost much more than the actual rebuilding of the destroyed structures. Approximately 8,000 square kilometers (~ 3,000 square miles) of land will have to undergo varying degrees of decontamination. This effort will last for many years and will cost many billions of dollars to complete.

Service disruption will be extensive in the area near ground zero and in the fallout path for several miles downwind. Services in these areas will not be restored for years because the land affected will not be returned to use until the decontamination is complete and the structures

rebuilt. Service disruption will be much less dramatic in areas that are less severely contaminated or not contaminated at all.

The electrical power grid is likely to be damaged by transients produced by the destruction of substations, as well as other power production and distribution installations, and perhaps by the EMP of the detonation. It is likely that the grid damage may cause power outages over wide areas, perhaps over several states, but these outages should be repaired within several days to a couple of weeks. The communication systems in the area will suffer similar damage and will likely be repaired within similar timeframes.

City water mains will likely survive without major damage. The city water supply is unlikely to become substantially contaminated with radiation via water main breaks, but it is possible that some small amount of radioactive and non-radioactive contamination may enter the lines.

To varying degrees, all government services will be impacted over some geographical area. The national economy will be significantly impacted. Decontamination, disposal, and replacement of lost infrastructure will cost many billions of dollars. Replacement of lost private property and goods could add billions more to the cost. Additionally, an overall national economic downturn, if not recession, is probable in the wake of the attack.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – Law enforcement attempts will be made to prevent development and detonation of the device. Site boundaries must be protected and surveyed after the detonation. Officers must respond to any additional threats or looting/theft issues.
- Emergency Assessment/Diagnosis*** – The detonation will be easily recognized as nuclear. Actions required include dispatching response units; making incident scene reports; detecting and identifying the source; establishing a perimeter; collecting information; making hazard assessments and predictions; coordinating hospital and urgent care facilities; coordinating county and state response requests; and coordinating monitoring, surveying, and sampling operations.
- Emergency Management/Response*** – Evacuation/shelter-in-place decisions must be made immediately. Required actions include alerting the public, providing traffic and access control, protecting at-risk and special populations, supporting requests for assistance, directing and controlling critical infrastructure assets, and directing public information activities. Location and removal of injured and disabled people will be a significant undertaking that will be greatly complicated by the need to keep the radiation dose of the individual workers as low as reasonably achievable (ALARA). Initial emergency workers will likely receive high doses of radiation and must be trained on how to avoid as much as possible.
- Incident/Hazard Mitigation*** – Self-evacuation should occur in the short-term, and the greatest factor impacting the reduction of the effects of the detonation on the general population will remain the speed and appropriateness of the decisions that are made and the effectiveness of the dissemination of this information (e.g., evacuation/shelter-in-place instructions).

Evacuees must be promptly decontaminated.

Public Protection –

Actions should include making and communicating protective action decisions, monitoring and decontaminating evacuees, implementing decisions to administer prophylaxis to the affected populations, protecting special populations, protecting schools and day care facilities, and providing shelter/reception facilities.

Victim Care –

Tens of thousands will require decontamination and both short-term and long-term treatment. Due to a high number of casualties, the level of care may be significantly lower than normally expected. When overwhelmed with victims who need care, decisions must be made based on the fact that the sooner the onset of the symptoms, the higher the dose received and the less likely the victim is to survive (even with medical intervention).

Investigation/Apprehension –

Attribution activities at the detonation site will rely largely on scientific forensic techniques and will be provided by specialized national teams. Actions of incident-site personnel will include site control and criminal investigation. Federal authorities or the military will probably conduct “apprehension” activities.

Recovery/Remediation –

Expected radiation levels will limit the total time workers can spend in the affected area, quickly leading to a shortage of willing, qualified, and trained workers. The volume of contaminated material that will be removed will overwhelm the national hazardous waste disposal facilities and will severely challenge the nation’s ability to transport the material. This effort will be the most expensive and time-consuming part of recovery and will likely cost many billions of dollars and take many years.

Note: For more information, there are two sections available only in the full-text version of this document that provide more detailed information regarding results. There is an *Estimated “Realistic” Results* section that reflects a set of possible results from the 10-kiloton detonation described in this scenario. The second section, Appendix 1-A, contains a consequence report for a 10-kiloton nuclear detonation in Washington, DC, that describes a set of possible consequences calculated for a 10-kiloton nuclear blast including its prompt effects (occurring within the first minute) and fallout. The results provided in Appendix 1-A are very conservative, and the results provided in the section, *Estimated “Realistic” Results* are less conservative and are intended to be more realistic.

Scenario 2: Biological Attack – Aerosol Anthrax

Executive Summary

Casualties	13,000 fatalities and injuries
Infrastructure Damage	Minimal, other than contamination
Evacuations/Displaced Persons	Possibly
Contamination	Extensive
Economic Impact	Billions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Months

Scenario Overview:

General Description –

Anthrax spores delivered by aerosol delivery results in inhalation anthrax, which develops when the bacterial organism, *Bacillus anthracis*, is inhaled into the lungs. A progressive infection follows. This scenario describes a single aerosol anthrax attack in one city delivered by a truck using a concealed improvised spraying device in a densely populated urban city with a significant commuter workforce. It does not, however, exclude the possibility of multiple attacks in disparate cities or time-phased attacks (i.e., “reload”). For federal planning purposes, it will be assumed that the Universal Adversary (UA) will attack five separate metropolitan areas in a sequential manner. Three cities will be attacked initially, followed by two additional cities 2 weeks later.

Timeline/Event Dynamics –

It is possible that a Bio-Watch signal would be received and processed, but this is not likely to occur until the day after the release. The first cases of anthrax would begin to present to Emergency Rooms (ERs) approximately 36 hours post-release, with rapid progression of symptoms and fatalities in untreated (or inappropriately treated) patients.

The situation in the hospitals will be complicated by the following facts: The release has occurred at the beginning of an unusually early influenza season and the prodromal symptoms of inhalation anthrax are relatively non-specific. Physician uncertainty will result in low thresholds for admission and administration of available countermeasures (e.g., antibiotics), producing severe strains on commercially available supplies of such medications as ciprofloxacin and doxycycline, and exacerbating the surge capacity problem.

Secondary Hazards/Events –

Social order questions will arise. The public will want to know very quickly if it is safe to remain in the affected city and surrounding regions. Many persons will flee regardless of the public health guidance that is provided. Pressure may be placed directly on pharmacies to dispense medical countermeasures directly, and it will be necessary to provide public health guidance in more than a dozen languages.

Key Implications:

This attack results in 328,484 exposures; 13,208 untreated fatalities; and 13,342 total casualties. Although property damage will be minimal, city services will be hampered by safety concerns.

There is the potential for a huge sell-off in the economic markets; moreover, the stock exchange and large businesses may be directly affected by the attack. There may also be a decline in consumer spending and a loss of revenue for the metropolitan area. An overall national economic downturn is possible in the wake of the attack due to loss of consumer confidence. The costs of the closure of a large section of the city and the decrease in revenue from tourism for an indeterminate period would be enormous, as would the costs of remediation and decontamination.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – This area requires knowledge of those with the ability to grow and aerosolize anthrax, reconnaissance of equipment and laboratories, and public health protection measures.
- Emergency Assessment/Diagnosis*** – It will be necessary to monitor attack impact, determine resource needs, classify the type of event, and identify other events (if any). Environmental sampling for exposure risk assessment, identification of anthrax strain, and determination of any drug resistance will also be required.
- Emergency Management/Response*** – Management and response will require public alerts, mobilization of the Strategic National Stockpile, activation of treatment sites, traffic/access control, special population protection, protective measures (e.g., shelter-in-place), requests for resources and assistance, and public information activities.
- Incident/Hazard Mitigation*** – Mitigation will require PEP and PPE provision, environmental testing/decontamination, care of ill persons, victim treatment, site remediation and monitoring, notification of airlines/transport providers, public information provision, and coordination with public health agencies.
- Public Protection*** – In order to protect the public, it will be necessary to provide symptom/exposure information, warnings, and shelter-in-place/evacuation notification, as well as to manage traffic/access flow and mobilize the Strategic National Stockpile.
- Victim Care*** – Care to the ill must be provided and should include disbursing PEP/vaccinations and establishing treatment/distribution centers.
- Investigation/Apprehension*** – Law enforcement will investigate the attack in collaboration with public health officials working to identify populations at risk of disease. This also requires epidemiological trace-back of victims, parallel criminal investigations, and laboratory analyses.
- Recovery/Remediation*** – The Environmental Protection Agency (EPA) and the CDC will coordinate this area. Extensive decontamination and cleanup will be required (anthrax is long-lived in the environment) costing billions of dollars. Remediation will also require environmental testing, highly contaminated area closures, and public information provision.

Scenario 3: Biological Disease Outbreak – Pandemic Influenza

Executive Summary

Casualties	At a 15% attack rate: 87,000 fatalities; 300,000 hospitalizations
Infrastructure Damage	None
Evacuations/Displaced Persons	Isolation of exposed persons
Contamination	None
Economic Impact	\$70 to \$160 billion
Potential for Multiple Events	Yes, would be worldwide nearly simultaneously
Recovery Timeline	Several months

Scenario Overview:¹

General Description –

Influenza pandemics have occurred every 10 to 60 years, with three occurring in the twentieth century (1918, 1957-1958, and 1967-1968). Influenza pandemics occur when there is a notable genetic change (termed genetic shift) in the circulating strain of influenza. Because of this genetic shift, a large portion of the human population is entirely vulnerable to infection from the new pandemic strain.

This scenario hypothetically relates what could happen during the next influenza pandemic without an effective preplanned response. At least twenty-five cases occur first in a small village in south China. Over the next 2 months, outbreaks begin to appear in Hong Kong, Singapore, South Korea, and Japan. Although cases are reported in all age groups, young adults appear to be the most severely affected, and case-fatality rates approach 5%. Several weeks later, the virus appears in four major U.S. cities. By nature, pandemic influenza moves extremely rapidly, and the outbreaks continue.

Timeline/Event Dynamics –

When planning and preparing for the next influenza pandemic, there are two equally important timelines. Due to the rapid spread of the influenza pandemic and the time required to develop, test, produce, and distribute an effective vaccine, the disease will likely arrive in the United States before a “significant” number of people can be vaccinated. The implication of this is that, as part of any pandemic influenza preparation and response plan, there must be a mechanism for allocating the vaccine among the population.

Secondary Hazards/Events –

The greatest secondary hazard will be the problems caused by shortages of medical supplies (e.g., vaccines and antiviral drugs), equipment (e.g., mechanical ventilators), hospital beds, and

¹ Adapted from Patriarcia et al., *Pandemic influenza: A planning guide for state and local officials (draft 2.1)*. Available from <http://www.cdc.gov/od/nvpo/pubs/pandemicflu.htm>.

health care workers. Having a detailed system for allocating resources potentially can reduce such difficulties. This system ideally should be in place well before an influenza pandemic actually occurs. Also of particular concern is the real likelihood that health care systems, particularly hospitals, will be overwhelmed. Another important secondary hazard is the disruption that might occur in society. Institutions, such as schools and workplaces, may close because a large proportion of students or employees are ill. A large array of essential services may be limited because workers are off work due to pandemic influenza. Travel between cities and countries may be sharply reduced.

Key Implications:

Estimates of impact are provided in Table 3-1.

Health Outcomes	15% Gross Attack Rate* (5 th , 95 th percentiles)	15% Gross Attack Rate (5 th , 95 th percentiles)
Fatalities	87,000 (54,400; 122,200)	207,000 (127,200; 285,300)
Hospitalizations	314,400 (210,400; 417,200)	733,800 (491,000; 973,500)
Outpatient visits	18.1 million (17.5; 18.7)	42.2 million (40.8; 43.7)
Self-care ill	21.3 million (20.6; 21.9)	49.7 million (48.2; 51.2)
*Percent Gross Attack Rate refers to the percentage of the entire U.S. population that will have a clinical case of influenza.		

Note: Assumptions for these estimates are available in the full-text version of this scenario, which also includes an Appendix 3-C that provides graphs and additional estimates.

Table 3-1. Mean estimates (5th, 95th percentiles) of the impact of the next influenza pandemic in the United States without any large-scale and/or effective interventions

Property damage is minimal. Service disruption, however, could be severe due to worker illness. Health care systems will be severely stressed, if not overwhelmed, and first responders are also likely to be severely strained.

Based on the estimates in Table 3-1, the economic impact, in 1995 U.S. dollars, will range from \$71 billion (15% gross attack rate) to \$166 billion (35% gross attack rate). These estimates include a value for time lost from work but do not include any estimate due to economic disruption or long-term health care costs.

Mission Areas Activated:

<i>Prevention/Deterrence/Protection –</i>	Prevention is currently impossible. Protection requires pre-pandemic preparedness, providing more vaccines and conducting more vaccine research and development, antiviral drug stockpiling, and increased surveillance capacity to track illness patterns.
<i>Emergency Assessment/Diagnosis –</i>	U.S. influenza surveillance systems will be activated. However, more information is needed regarding attack rate measurements.
<i>Emergency Management/Response –</i>	Preparedness plans should contain clear guidelines on setting priorities for the use of scarce resources such as vaccines, drugs, and hospital beds. Federal and state governments have such plans in progress but not all are complete.
<i>Incident/Hazard Mitigation –</i>	Success depends on the availability of scarce resources and how well these resources are distributed. Timely, effective public information communication is also important.
<i>Public Protection –</i>	Due to late-onset symptoms and the rapid rate at which the disease spreads, evacuation and quarantine are not recommended. Protection will rely on vaccines and antiviral drugs to prevent spread of the disease.
<i>Victim Care –</i>	Will rely on the use of antiviral drugs for treatment. Hospitalization and mechanical ventilators will be necessary for many and likely be in short supply. However, at-home care and over-the-counter medications may be helpful for some. A large number of fatalities will likely occur, requiring mortuary and burial services.
<i>Investigation/Apprehension –</i>	Investigation is dependent on disease surveillance, although the current system has distinct limitations.
<i>Recovery/Remediation –</i>	Not required.

Scenario 4: Biological Attack – Plague

Executive Summary

Casualties	2,500 fatalities; 7,000 injuries
Infrastructure Damage	None
Evacuations/Displaced Persons	Possibly
Contamination	Lasts for hours
Economic Impact	Millions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Weeks

Scenario Overview:

General Description –

Plague is a bacterium that causes high mortality in untreated cases and has epidemic potential. It is best known as the cause of Justinian’s Plague (in the middle sixth century) and the Black Death (in the middle fourteenth century), two pandemics that killed millions. In this scenario, members of the Universal Adversary (UA) release pneumonic plague into three main areas of a major metropolitan city – in the bathrooms of the city’s major airport, at the city’s main sports arena, and at the city’s major train station.

Timeline/Event Dynamics –

Plague cases rapidly occur in the United States and Canada. As a result of foreign and domestic travel, rapid dissemination to distant locations occurs. By Day 3, the plague spreads across both the Pacific and Atlantic oceans and by Day 4, the plague is confirmed in eleven countries other than the United States and Canada.

Secondary Hazards/Events –

As the financial world in Major City and elsewhere begins to realize the likelihood of an epidemic, a huge sell-off occurs in the markets. There is a high absentee rate at banks, other financial institutions, and major corporations. Adding to these complications is the fact that bank and other financial customers may be staying home. As a result, the phone systems at financial institutions may become completely tied up, with far fewer transactions than normal occurring. The fear of plague has raised memories of the anthrax incidents of 2001, which may cause many citizens to be afraid to open their mail.

Key Implications:

Morbidity and mortality totals by the end of the fourth day are indicated in Table 4-1. Although the specific assumptions that underlie these totals are not generally available, nor can they be reliably recreated, the parameters affecting these figures include length of incubation period following primary exposure, rate of secondary transmission, incubation period following secondary exposure, and timing and effectiveness of the intervention.

Illnesses and Fatalities by Country		
	Illnesses	Fatalities
United States	7,348	2,287
Canada	787	246
Other Countries	33	10
Total	8,168	2,543

Table 4-1. Total illnesses and fatalities by country by the end of the fourth day (end of the exercise)

Although the actual physical damage to property will be negligible, there will be an associated negative impact of buildings and areas that were or could have been contaminated. Service disruption will be significant for call centers, pharmacies, and hospitals due to overwhelming casualty needs. It will be necessary to close or restrict certain transportation modes. The threat of reduced food supply will cause food prices to rise.

A huge sell-off in the economic markets is possible, and loss of life will result in a decline in consumer spending and subsequent loss of revenue in the metropolitan area. An overall national economic downturn is possible in the wake of the attack due to loss of consumer confidence.

Many people will be killed, permanently disabled, or sick as a result of the plague. The primary illness will be pneumonia, although the plague can also cause septicemia, circulatory complications, and other manifestations. The long-term effects of antimicrobial prophylaxis in large numbers will require follow-up study. The associated mental health issues relating to mass trauma and terrorism events will also require assessment.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – This area requires knowledge of persons with the skills to grow and aerosolize plague, reconnaissance of supplies and laboratories, and public health protection measures.
- Emergency Assessment/Diagnosis*** – Although health professionals should rapidly recognize the seriousness of the incident, diagnosis of the plague may be delayed. Detection of the plague should initiate laboratory identification of the strain and a determination of the potentially known antimicrobial drug resistance. Origin of the initial contaminant should be traced back to the source.
- Emergency Management/Response*** – Identification of drug-resistant plague strains would require full utilization of personal protective equipment (PPE) and quarantine measures. Response will require provision of public alerts, mobilization of the National Strategic Stockpile, activation of treatment sites, traffic and access control, protection of special populations, potential quarantine measures including shelter-in-place recommendations, requests for resources and assistance, and public information activities. Effective communication between U.S. and Canadian governments is vital.
- Incident/Hazard Mitigation*** – Victims must receive antibiotic therapy within 24 hours to prevent fatality. Exposed victims must be isolated and minimizing disease spread will require epidemiological assessments, including contact investigation and notification.
- Public Protection*** – Victims must be evacuated and treated (and/or self-quarantined), and antimicrobial prophylaxis will be necessary for exposed persons, responders, and pertinent health care workers. Mobilization of the Strategic National Stockpile for additional critical supplies and antibiotics will be necessary. The public should be informed of signs and symptoms of plague.
- Victim Care*** – Victims will require treatment or prophylaxis with ventilators and antibiotics, as well as information measures for preventing spread of the disease. Advanced hospital care will be required for those with pneumonia. The U.S. Department of State's Bureau of Consular Affairs will need to be involved in order to assist foreign populations residing in the United States, or U.S. citizens exposed or ill abroad.
- Investigation/Apprehension*** – Point-of-source exposures and plague strain must be determined using victim trace-back, criminal investigation, and laboratory analyses.
- Recovery/Remediation*** – Extensive decontamination and cleanup will not be necessary because plague cannot live long in the environment and is viable to heat and sunlight exposure. However, some efforts should be undertaken to support political/public confidence.

Scenario 5: Chemical Attack – Blister Agent

Executive Summary

Casualties	150 fatalities; 70,000 hospitalized
Infrastructure Damage	Minimal
Evacuations/Displaced Persons	More than 100,000
Contamination	Structures affected
Economic Impact	\$500 million
Potential for Multiple Events	Yes
Recovery Timeline	Weeks; many long-term health affects

Scenario Overview:

General Description –

Agent YELLOW, which is a mixture of the blister agents sulfur Mustard and Lewisite, is a liquid with a garlic-like odor. Individuals who breathe this mixture may experience damage to the respiratory system. Contact with the skin or eye can result in serious burns. Lewisite or Mustard-Lewisite also can cause damage to bone marrow and blood vessels. Exposure to high levels may be fatal.

In this scenario, the Universal Adversary (UA) uses a light aircraft to spray chemical agent YELLOW into a packed college football stadium. The agent directly contaminates the stadium and the immediate surrounding area, and generates a downwind vapor hazard. The attack causes a large number of casualties that require urgent and long-term medical treatment, but few immediate fatalities occur. Of the total stadium attendance, 70% is exposed to the liquid at the time of the attack. The remaining 30% (i.e., those in the covered areas of the stadium), plus 10% of the total population in the vapor hazard area, are exposed to vapor contamination.

Timeline/Event Dynamics –

The total time of the attack, including the last mile of the plane's approach, is less than 5 minutes. The crowd will panic and immediately evacuate the stadium, which will require up to 30 minutes. First responders should begin arriving at the facility perimeter within 10 to 15 minutes of the attack. In order for the UA to succeed in this attack, certain meteorological conditions – wind speed, temperature, humidity, and precipitation – must be met.

Secondary Hazards/Events –

Numerous injuries will occur as a result of crowd panic, including those that result from falling and crushing. Further injuries are likely to occur due to motor vehicle accidents in the parking lot and surrounding roadways.

Key Implications:

In the case of a full, 100,000-seat stadium, 70,000 people (70%) may be contaminated in the attack. Of these, most will have only clothing and/or skin contamination, resulting in moderate-to-severe skin blisters that will appear in 2 to 12 hours. Expedient decontamination (i.e., clothing removal and heavy water spray) will avoid half of these injuries. Systemic arsenic poisoning will occur in highly contaminated individuals. However, many will inhale sufficient agent vapor to cause severe lung damage, and many more will sustain permanent damage to the eyes. Fatalities and major injuries will occur due to falling and crushing during the evacuation, and to vehicle accidents.

There will be little direct property damage due to the attack. However, the stadium site and other contaminated property will be a total loss due to decontamination measures and/or psychological impacts of future usability.

Loss of use of the stadium and adjacent athletic facilities is expected. Additionally, some public transportation and other facilities may be lost due to contamination carried by fleeing victims. Overwhelming demand will disrupt communications (landline telephone and cellular) in the local area. Finally, some victims may self-transport to health care facilities and contaminate those facilities.

Decontamination, destruction, disposal, and replacement of a major stadium could cost up to \$500 million. Enrollment at the college will be negatively affected, and the local community will experience significant losses resulting from the attack. Additionally, an overall national economic downturn is possible in the wake of the attack due to a loss of consumer confidence.

Many will be permanently blinded and many more will carry lifetime scars. Many may suffer significant damage to the lungs. In addition, Mustard is a known carcinogen, and systemic poisoning from the arsenic in Lewisite is also a concern.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – The ability to prevent the attack is contingent on the prevention of chemical warfare material (CWM) importation, weapon assembly, plane and pilot acquisition, and site reconnaissance.
- Emergency Assessment/Diagnosis*** – Hazardous material (HazMat) teams should instantly recognize the attack. Liquid contamination and a downwind vapor hazard will be components of the hazard. Actions required include dispatch; agent detection; and hazard assessment, prediction, monitoring, and sampling.
- Emergency Management/Response*** – Actions required include alerts, activation and notification, traffic and access control, protection of special populations, resource support and requests for assistance, and public information activities.
- Incident/Hazard Mitigation*** – The spread of contamination by fleeing victims will be a major challenge. Actions required include isolating and defining the hazard; establishing, planning, and operating incident command; preserving the scene; conducting mitigation efforts; decontaminating responders; and conducting site remediation and monitoring.
- Public Protection*** – Evacuation and/or sheltering of downwind populations in a 360-degree arc around the stadium will be required until the stadium is decontaminated.
- Victim Care*** – Tens of thousands of people will require decontamination and both short- and long-term medical treatment.
- Investigation/Apprehension*** – Actions required include aircraft tracking, dispatch, site control, criminal investigation, tactical deployment, and suspect apprehension.
- Recovery/Remediation*** – The stadium and adjacent facilities must be decontaminated of liquid agent YELLOW. Decontamination waste disposal is complicated by the presence of arsenic. Environmental testing must be done. Although decontamination could technically restore the stadium, psychological impact will likely require the stadium to be rebuilt.

Scenario 6: Chemical Attack – Toxic Industrial Chemicals

Executive Summary

Casualties	350 fatalities; 1,000 hospitalizations
Infrastructure Damage	50% of structures in area of explosion
Evacuations/Displaced Persons	Up to 700,000
Contamination	Yes
Economic Impact	Billions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Months

Scenario Overview:

General Description –

In this scenario, terrorists from the Universal Adversary (UA) land in several helicopters at fixed facility petroleum refineries. They quickly launch rocket-propelled grenades (RPGs) and plant improvised explosive devices (IEDs) before re-boarding and departing, resulting in major fires. At the same time, multiple cargo containers at a nearby port explode aboard or near several cargo ships with resulting fires. Two of the ships contain flammable liquids or solids. The wind is headed in the north-northeast direction, and there is a large, heavy plume of smoke drifting into heavily populated areas and releasing various metals into the air. One of the burning ships in the port contains resins and coatings including isocyanates, nitriles, and epoxy resins. Some IEDs are set for delayed detonation. Casualties occur onsite due to explosive blast and fragmentation, fire, and vapor/liquid exposure to the toxic industrial chemical (TIC). Downwind casualties occur due to vapor exposure.

Timeline/Event Dynamics –

Total time to plan and prepare for the attack would be on the order of 2 years, including reconnaissance, pilot and weapons training, and accumulation of weapons. Time to execute the attack would be several weeks to coordinate the shipping and coincident arrival of the containers aboard separate ships at the port. Time to execute the airborne phase of the attack would be on the order of 1 to 2 hours from liftoff from the originating airport. Time over target for the helicopters would be about 10 minutes. Time on the ground would be 2 to 3 minutes at each site. Fires resulting from the attack would take many hours, possibly days, to extinguish. In order for the UA to succeed in this attack, certain meteorological conditions – wind speed, temperature, humidity, and precipitation – must be met.

Secondary Hazards/Events –

Once they grasp the situation, authorities will evacuate or order shelter-in-place for a significant area downwind of the refineries and the port. Numerous injuries will occur as a result of population panic once downwind casualties begin to occur. Further injuries are likely to occur due to motor vehicle accidents in the surrounding roadways. (The rule of thumb is one fatality

per 10,000 evacuated.) Significant contamination of the waterway may also result, including oil and cargo spills from sunk or burning ships.

Key Implications:

Assuming a densely populated area, 7,000 people may be in the actual downwind area. Of these, 5% (350) will receive lethal exposures, and half of these will die before or during treatment. An additional 15% will require hospitalization, and the remainder will be treated and released at the scene by Emergency Medical Service (EMS) personnel. However, approximately 70,000 “worried well” may seek treatment at local medical facilities.

All three refineries sustain significant damage, with 50% of the equipment and facilities requiring significant repairs or replacement. Two ships in the port sink at their moorings; the port sustains heavy damage near the ships and at a dozen points where IEDs were dropped. Depending on which chemicals are released, there may be significant property damage in the downwind area.

Refinery capacity on the west coast is significantly diminished, resulting in fuel shortages and price increases. The port is temporarily closed due to damage and contamination. Contamination in the waterway may also result. Some public transportation and other facilities may be lost. Overwhelming demand will disrupt communications (landline telephone and cellular) in the local area. Significant disruptions in health care occur due to the overwhelming demand of the injured and the “worried well.”

Decontamination, destruction, disposal, and replacement of major portions of the refineries could cost billions of dollars. Similar costs could be expected at the port. Loss of the port will have a significant impact on U.S. trade with the Pacific Rim. An overall national economic downturn is possible in the wake of the attack due to a loss of consumer confidence.

In addition to their toxic effects, many TICs are known carcinogens. Long-term damage to internal organs and eyes is possible, depending on which TICs are present.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – Avoiding an attack would require prevention of aircraft and weapons acquisition, IED assembly, and site reconnaissance.
- Emergency Assessment/Diagnosis*** – The presence of multiple chemicals and exposure symptoms will greatly complicate assessment and identification efforts. Actions required include dispatch; TIC detection; and hazard assessment, prediction, monitoring, and sampling.
- Emergency Management/Response*** – Actions required include alerts, activation and notification, traffic and access control, protection of special populations, resource support and requests for assistance, and public information activities.
- Incident/Hazard Mitigation*** – Mitigation measures will be complicated by multiple TICs and secondary device concerns. Actions required include isolating and defining the hazard; establishing, planning, and operating incident command; firefighting; performing bomb disposal dispatch and IED render-safe procedures; preserving the scene; conducting mitigation efforts; decontaminating responders; and performing site remediation and monitoring.
- Public Protection*** – Evacuation and/or sheltering of downwind populations will be required.
- Victim Care*** – Injuries to be treated will include trauma, burns, smoke inhalation, severe respiratory distress, seizures, and/or comas. Short- and long-term treatment will be required as well as decontamination.
- Investigation/Apprehension*** – Searching for suspects and evidence in an industrial area while wearing personal protective equipment (PPE) will be a significant challenge. Actions required include dispatch, site control, criminal investigation, pursuit and tactical deployment, and apprehension of suspects.
- Recovery/Remediation*** – The extent of decontamination required will depend on the TIC. Regardless, monitoring and sampling a large industrial port facility and refineries will be a challenge. Site restoration will be a major challenge, particularly for the refineries. Environmental impact issues are likely to significantly delay rebuilding efforts.

Scenario 7: Chemical Attack – Nerve Agent

Executive Summary

Casualties	6,000 fatalities (95% of building occupants); 350 injuries
Infrastructure Damage	Minimal, other than contamination
Evacuations/Displaced Persons	Yes
Contamination	Extensive
Economic Impact	\$300 million
Potential for Multiple Events	Extensive
Recovery Timeline	3 to 4 months

Scenario Overview:

General Description –

Sarin is a human-made chemical warfare agent classified as a nerve agent. Nerve agents are the most toxic and rapidly acting of the known chemical warfare agents. Sarin is a clear, colorless, and tasteless liquid that has no odor in its pure form. However, Sarin can evaporate into a vapor and spread into the environment. Sarin is also known as GB.

In this scenario, the Universal Adversary (UA) builds six spray dissemination devices and releases Sarin vapor into the ventilation systems of three large commercial office buildings in a metropolitan area. The agent kills 95% of the people in the buildings, and kills or sickens many of the first responders. In addition, some of the agent exits through rooftop ventilation stacks, creating a downwind hazard.

For purposes of estimating federal response requirements, each building is assumed to have an occupancy of 2,000 personnel (i.e., twenty-story buildings with 100 occupants per floor), and the outdoor/subway population density of the surrounding areas is 3,900 people per square mile (one-tenth of the total population density in the vicinity of Times Square, New York).

Timeline/Event Dynamics –

The attack will require 6 months to plan, including putting faux janitors in place, shipping the agent, and fabricating the spray devices. The actual attack will take less than 10 minutes. First responders should arrive at the facility within 10 to 15 minutes of the attack. In order for the UA to succeed in this attack, certain meteorological conditions – wind speed, temperature, humidity, and precipitation – must be met.

Secondary Hazards/Events –

Numerous injuries will occur as a result of panic on the street, including falling and crushing injuries. Further injuries are likely to occur due to motor vehicle accidents in the surrounding roadways.

Key Implications:

Assuming 2,000 occupants per building, the initial fatality count will be 5,700 (95%) and 300 injured, including the initial Emergency Medical Service (EMS) and fire personnel at each building. Patients who experience prolonged seizures may sustain permanent damage to the central nervous system – assume 350 patients in this category (300 inside plus 50 outside). Fatalities and major injuries will occur due to falling and crushing during the panic on the street, and due to vehicle accidents.

Little direct damage due to the attack, except the building interiors and contents, will be highly contaminated by agent condensing on surfaces. The three buildings and their contents will be a total loss due to decontamination measures and/or psychological impacts of future usability. However, airing and washing should decontaminate adjacent structures adequately.

Overwhelming demand will disrupt communications (landline telephone and cellular) in the local area. There will be large numbers of “worried well” swamping the medical system. Loss of three fire crews and three EMS crews will impact readiness for other events in the short term.

Decontamination, destruction, disposal, and replacement of three large commercial office buildings could cost up to \$300 million. Business in the buildings may never reopen, and an overall national economic downturn is possible in the wake of the attack due to loss of consumer confidence.

Those who survive usually recover within 4 to 6 weeks, with full cholinesterase level restoration within 3 to 4 months. Patients who experience prolonged seizures may sustain permanent damage to the central nervous system.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – The ability to prevent the attack is contingent on the prevention of CWM importation, weapons assembly, and site reconnaissance.
- Emergency Assessment/Diagnosis*** – Rapid recognition of an attack will be key to avoiding first responder casualties. Actions required include dispatch; agent detection; and hazard assessment, prediction, monitoring, and sampling.
- Emergency Management/Response*** – Actions required include alerts, activation and notification, traffic and access control, protection of special populations, resource support and requests for assistance, and public information activities.
- Incident/Hazard Mitigation*** – Actions required include isolating and defining the hazard; establishing, planning, and operating incident command; preserving the scene; conducting mitigation efforts; decontaminating responders, and conducting site remediation and monitoring.
- Public Protection*** – Evacuation and/or sheltering of downwind populations will be required.
- Victim Care*** – Tens of thousands of persons will require monitoring and decontamination as they are allowed to leave their buildings. Hundreds will require hospital treatment.
- Investigation/Apprehension*** – Tracking and apprehension of the suspects will be included. Actions required include suspect tracking and apprehension, dispatch, site control, criminal investigation, and tactical deployment.
- Recovery/Remediation*** – Anything exposed to a high-vapor agent concentration will require decontamination, including bodies. There will be little damage to the building as a direct result of the attack. However, decontamination of some materials may be difficult or impossible. Even if structures and property could be technically decontaminated, the psychological impact on future usability would be significant.

Scenario 8: Chemical Attack – Chlorine Tank Explosion

Executive Summary

Casualties	17,500 fatalities; 10,000 severe injuries; 100,000 hospitalizations
Infrastructure Damage	In immediate explosions areas, and metal corrosion in areas of heavy exposure
Evacuations/Displaced Persons	Up to 70,000 (self evacuate)
Contamination	Primarily at explosion site, and if waterways are impacted
Economic Impact	Millions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Weeks

Scenario Overview:

General Description –

Chlorine gas is poisonous and can be pressurized and cooled to change it into a liquid form so that it can be shipped and stored. When released, it quickly turns into a gas and stays close to the ground and spreads rapidly. Chlorine gas is yellow-green in color and although not flammable alone, it can react explosively or form explosive compounds with other chemicals such as turpentine or ammonia.

In this scenario, the Universal Adversary (UA) infiltrates an industrial facility and stores a large quantity of chlorine gas (liquefied under pressure). Using a low-order explosive, UA ruptures a storage tank man-way, releasing a large quantity of chlorine gas downwind of the site. Secondary devices are set to impact first responders.

Timeline/Event Dynamics –

Total time to plan and prepare for the attack would be on the order of 2 years, including reconnaissance and weapons training, and accumulation of weapons. The actual infiltration, explosive charges setting, and ex-filtration would take less than 20 minutes. Except in very cold conditions, the release would be complete in less than an hour. The plume would travel downwind and be dispersed below the detection level in 6 hours. In order for the UA to succeed in this attack, certain meteorological conditions – wind speed, temperature, humidity, and precipitation – must be met.

Secondary Hazards/Events –

Authorities will shelter-in-place a significant area downwind of the site. Numerous injuries will result from population panic once downwind casualties begin to occur, and as many as 10% of the people will self-evacuate. Additional injuries are likely, due to motor vehicle accidents in the surrounding roadways. The rule of thumb is one fatality per 10,000 evacuated. Any local waterways or wetlands will absorb the chlorine gas, creating hydrochloric acid and lowering the acidity (potential of hydrogen, or pH) of the water.

Key Implications:

Assuming a high-density area, as many as 700,000 people may be in the actual downwind area, which could extend as far as 25 miles. Of these, 5% (35,000) will receive potentially lethal exposures, and half of these will die before or during treatment. An additional 15% will require hospitalization, and the remainder will be treated and released at the scene by Emergency Medical Service (EMS) personnel. However, approximately 450,000 “worried well” will seek treatment at local medical facilities.

The storage tank will be lost, along with some sensitive control systems damaged by the freezing liquefied gas. The secondary devices will cause damage to other plant facilities and equipment in a 20-meter radius of the blasts as well. There will be hundreds, if not thousands, of auto accidents during the evacuation. In areas of heavy chlorine exposure, there will also be heavy corrosion of metal objects.

The plant will be temporarily closed due to bomb damage. Overwhelming demand will disrupt communications (landline telephone and cellular) in the local area. Significant disruptions in health care occur due to the overwhelming demand of the injured and the “worried well.”

Decontamination, destruction, disposal, and replacement of major portions of the plant could cost millions. The local economy will be impacted by a loss of jobs at the facility if it is unable to reopen. An overall national economic downturn is possible in the wake of the attack due to a loss of consumer confidence.

Most of the injured will recover in 7 to 14 days, except for those with severe lung damage. These individuals will require long-term monitoring and treatment.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – The ability to prevent the attack is contingent on the prevention of weapons acquisition, specifically IEDS, and site reconnaissance.
- Emergency Assessment/Diagnosis*** – The presence of secondary devices will complicate assessment and identification efforts. Actions required include dispatch; chlorine detection; and hazard assessment, prediction, monitoring, and sampling.
- Emergency Management/Response*** – Actions required include alerts, activation and notification, traffic and access control, protection of special populations, resource support and requests for assistance, and public information activities.
- Incident/Hazard Mitigation*** – Mitigation measures will be complicated by secondary device concerns (i.e., delayed detonation of IEDs). Actions required include isolating and defining the hazard; establishing, planning, and operating incident command; firefighting; conducting bomb disposal dispatch and IED render-safe procedures; preserving the scene; performing mitigation efforts; decontaminating responders; and conducting site remediation and monitoring.
- Public Protection*** – Evacuation and/or sheltering of downwind populations will be required.
- Victim Care*** – Injuries to be treated will include respiratory difficulty or severe distress and/or vehicular accident trauma. Short- and long-term treatment may be required.
- Investigation/Apprehension*** – Searching for suspects and evidence in an industrial area while wearing personal protective equipment (PPE) will be a significant challenge. Actions required include dispatch, site control, criminal investigation, pursuit and tactical deployment, and apprehension of suspects.
- Recovery/Remediation*** – Since chlorine is a gas, the extent of decontamination required will be minor and largely related to any releases generated by secondary devices. Regardless, monitoring and sampling a large industrial facility will be a challenge. There will be significant damage to the plant as a direct result of the attack. Decontamination of waterways may present a significant challenge as well. Environmental impacts, especially public safety concerns, are likely to significantly delay rebuilding efforts.

Scenario 9: Natural Disaster – Major Earthquake

Executive Summary

Casualties	1,400 fatalities; 100,000 hospitalizations
Infrastructure Damage	150,000 buildings destroyed, 1 million buildings damaged
Evacuations/Displaced Persons	300,000 households
Contamination	From hazardous materials, in some areas
Economic Impact	Hundreds of billions
Potential for Multiple Events	Yes, aftershocks
Recovery Timeline	Months to years

Scenario Overview:

General Description –

Earthquakes occur when the plates that form under the Earth's surface suddenly shift, and most earthquakes occur at the boundaries where the plates meet. A fault is a fracture in the Earth's crust along which two blocks of the crust have slipped with respect to each other. The magnitude of an earthquake, usually expressed by the Richter Scale, is a measure of the amplitude of the seismic waves. The intensity, as expressed by the Modified Mercalli Scale, is a subjective measure that describes how strong a shock was felt at a particular location.

The Richter Scale is logarithmic so that a recording of 7, for example, indicates a disturbance with ground motion ten times as large as a recording of 6. A quake of magnitude 2 is the smallest quake normally felt by people. Earthquakes with a Richter value of 6 or more are commonly considered major; great earthquakes have magnitude of 8 or more. The Modified Mercalli (MM) Scale expresses the intensity of an earthquake's effects in a given locality in values ranging from I to XII. The most commonly used adaptation covers the range of intensity from the condition of "I – Not felt except by a very few under especially favorable conditions," to "XII – Damage total. Lines of sight and level are distorted. Objects thrown upward into the air."

In this scenario, a 7.2-magnitude earthquake occurs along a fault zone in a major metropolitan area (MMA) of a city. MM Scale VIII or greater intensity ground shaking extends throughout large sections of the metropolitan area, greatly impacting a six-county region with a population of approximately 10 million people. Subsurface faulting occurs along 45 miles of the fault zone, extending along a large portion of highly populated local jurisdictions, creating a large swath of destruction. Soil liquefaction occurs in some areas, creating quicksand-like conditions.

Timeline/Event Dynamics –

While scientists have been predicting a moderate to catastrophic earthquake in the region sometime in the future, there were no specific indications that an earthquake was imminent in the days and weeks prior to this event.

Damage includes a large multi-state area of several hundred square miles. Rapid horizontal movements associated with the earthquake shift homes off their foundations and cause some tall buildings to collapse or “pancake” as floors collapse down onto one another. Shaking is exaggerated in areas where the underlying sediment is weak or saturated with water. (Note: In the central and eastern United States, earthquake waves travel more efficiently than in the western United States. An earthquake of a given size in the central and eastern United States may cause damage over a much broader area than the same size earthquake in California.)

Several hours later, an aftershock of magnitude 8.0 occurs. Based on past events, additional aftershocks are possible. Sizeable aftershocks (7.0 to 8.0 in magnitude) may occur for months after the original jolt.

Secondary Hazards/Events –

As a result of the earthquake, hazardous contamination impacts of concern include natural gas compression stations and processing plants, oil refineries and major tank farms, and natural gas/crude oil pipelines. In addition, more than 2,000 spot fires occur and widespread debris results. Flooding may occur due to levee failures and breaks in water mains and sewage systems.

Transportation lines and nodes; power generation and distribution; communications lines; fuel storage and distribution; and various structures (ranging from dams to hospitals) may be damaged and will require damage assessment in order to continue operating. Reduced availability of services will be disruptive and costly.

Ground shaking from the earthquake has generated massive amounts of debris (more than 120 million tons) from collapsed structures. In addition, fuel pumps in several gas stations have sustained damages, leaking thousands of gallons of gasoline into the streets. There are numerous reports of toxic chemical fires, plumes with noxious fumes, and spills. Several other local waste treatment facilities have reported wastewater and sewage discharges. A large refining spill has contaminated the port facility and is spilling into the harbor. Significant concern for spilled hazardous materials from storage, overturned railcars, and chemical stockpiles make progress very slow as triage is conducted.

Key Implications:

Approximately 1,400 fatalities occur as a direct result of the earthquake. More than 100,000 people are injured and continue to overwhelm area hospitals and medical facilities, most of which have sustained considerable damage. Approximately 18,000 of the injured require hospitalization. As many as 20,000 people are missing and may be trapped under collapsed buildings and underground commuter tunnels.

More than 1 million buildings were at least moderately damaged (40% of the buildings) and more than 150,000 buildings have been completely destroyed

Service disruptions are numerous to households, businesses, and military facilities. Medical services are overwhelmed and functioning hospitals are limited. Fire and Emergency Medical Services (EMS) stations and trucks were also damaged. Bridges and major highways are down or blocked and damaged runways have caused flight cancellations. There are widespread power

outages and ruptures to underground fuel, oil, and natural gas lines. Water mains are broken. Wastewater primary receptors have broken, closing down systems and leaking raw sewage into the streets. As a result, public health is threatened.

More than 300,000 households have been displaced, and many businesses have lost employees and customers. The port has been adversely affected in its capacity to provide export/import and loading/unloading capabilities, and damage to vital parts of the communications infrastructure has resulted in limited communications capabilities.

The disruption to the nation's economy could be severe because the earthquake impacts major supply and transportation centers. Reconstruction, repairs, disposal, and replacement of lost infrastructure will cost billions of dollars. Replacement of lost private property and goods could also cost billions. An overall national economic downturn is probable in the wake of this event.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – After the earthquake occurs, actions should be taken to protect critical facilities from terrorist attacks and to maintain civil order.
- Emergency Assessment/Diagnosis*** – Disaster assessments and aerial reconnaissance are necessary. Using real-time seismic data, the Federal Emergency Management Agency (FEMA) runs an earthquake model to provide a preliminary “best guess” at the level of expected damage, subject to confirmation or modification through remote sensing and field assessments. Assessment teams must be deployed and remote sensing initiated.
- Emergency Management/Response*** – Hazardous material spills must be managed. Emergency medical treatment, shelters, and food must be provided. A Joint Information Center (JIC) is established, and search and rescue teams must be placed on alert, some of which should be activated and deployed. Public utilities and other basic-needs services must be repaired as quickly as possible, and damage assessments should be conducted.
- Incident/Hazard Mitigation*** – Federal support will be required to coordinate the development of plans to execute mitigation efforts to lessen the effects of future disasters. Mitigation to minimize or avoid future impacts would largely be an issue for recovery and restoration.
- Public Protection*** – Structural engineers are inspecting critical building, bridge, freeway, waste facilities, etc., and inspection teams are deployed to inspect hundreds of homes for safe habitability.
- Victim Care*** – The massive number of injured and displaced persons requires a warning order for the activation of Task Forces for the delivery of mass care and health and medical services. Temporary housing strategies must be considered.
- Investigation/Apprehension*** – Not applicable (natural disaster).
- Recovery/Remediation*** – Hazardous materials will contaminate many areas, and decontamination and site restoration will be a major challenge.

Scenario 10: Natural Disaster – Major Hurricane

Executive Summary

Casualties	1,000 fatalities, 5,000 hospitalizations
Infrastructure Damage	Buildings destroyed, large debris
Evacuations/Displaced Persons	1 million evacuated; 100,000 homes seriously damaged
Contamination	From hazardous materials, in some areas
Economic Impact	Millions of dollars
Potential for Multiple Events	Yes, seasonal
Recovery Timeline	Months

Scenario Overview:

General Description –

Hurricanes are intense tropical weather systems consisting of dangerous winds and torrential rains. Hurricanes often spawn tornadoes and can produce a storm surge of ocean water that can be up to 24 feet at its peak and 50 to 100 miles wide. The most destructive companion of hurricanes is the storm surge.

A typical hurricane is 400 miles in diameter and has an average forward speed of 15 miles per hour (mph) in a range of 0 to 60 mph. The average life span of a hurricane is 9 days in a range of less than 1 day to more than 12 days. Hurricanes' highest wind speeds are 20 to 30 miles from the center. Hurricane force winds cover almost 100 miles, and gale-force winds of 40 mph or more may cover 400 miles in diameter. A fully developed hurricane may tower 10 miles into the atmosphere.

A hurricane is categorized by its sustained wind intensity on a Saffir-Simpson Hurricane Scale that is used to estimate the potential for property damage and flooding. "Major" hurricanes are placed in Categories 3, 4, or 5 with sustained wind intensities between 111 mph to greater than 155 mph. The most dangerous potential storm would be a slow-moving Category 5 hurricane, making landfall in a highly populated area.

In this scenario, a Category 5 hurricane hits a Major Metropolitan Area (MMA). Sustained winds are at 160 mph with a storm surge greater than 20 feet above normal. As the storm moves closer to land, massive evacuations are required. Certain low-lying escape routes are inundated by water anywhere from 5 hours before the eye of the hurricane reaches land.

Timelines/Event Dynamics –

A tropical storm develops in the Atlantic and is upgraded to a hurricane after 5 days in the open waters. After 4 days, the hurricane has steadied at dangerous Category 4 level on the Saffir-Simpson Hurricane Scale and models indicate a track that includes a possible landfall along the coast adjacent to the MMA within 2 more days. The hurricane reaches its peak as predicted and makes landfall with a direct hit on the MMA and coastal resort towns. The next day the hurricane

moves out. The rain associated with the storm has caused rivers to overflow their banks, and several rivers systems are experiencing record flood levels.

Secondary Hazards/ Events –

In addition to the massive destruction caused by the hurricane itself, there are also areas within the MMA and scattered inland areas that have sustained severe damage from tornadoes that were generated by the storm. Storm surges and heavy rains cause catastrophic flooding to low lying areas. Rainfall from the hurricane, in combination with earlier storms, causes significant flooding in multiple states along the coast.

Flooded and damaged petrochemical facilities, chemical plants, sewage treatment plants, and other facilities threaten the health of citizens, create a hazardous operating environment, and require cleanup and remediation. An oil tanker is blown off course during the storm and sustains serious damage and leaks oil into the waters adjacent to the MMA.

Key Implications:

The hurricane results in more than 1,000 fatalities, and 5,000 thousand people have sustained injuries requiring professional treatment. Tourists and residents in low-lying areas were ordered to evacuate 48 hours prior to projected landfall. Twenty-four hours prior to predicted landfall massive evacuations were ordered, and evacuation routes have been overwhelmed.

Major portions of the MMA become flooded. Structures in the low-lying areas are inundated when storm surges reach their peak. Many older facilities suffer structural collapse due to the swift influx of water and degradation of the supporting structural base. Newer facilities and structures survive the influx of water, but sustain heavy damage to contents on the lower levels.

Most all shrubbery and trees within the storm's path are damaged or destroyed, generating massive amounts of debris. Debris is also generated from structures destroyed from tornadoes and structures that have been destroyed or damaged by the hurricane. Many structures will need to be demolished.

Service disruptions are numerous. Shelters throughout the region are also filled to capacity. Hundreds of people are trapped and require search and rescue. Until debris is cleared, rescue operations are difficult because much of the area is reachable only by helicopters and boats. Wind and downed trees have damaged nearly all of the electric transmission lines within the MMA. Most communications systems within the impacted area are not functioning due to damage and lack of power.

Thousands are homeless, and all areas are in serious need of drinking water, and food is in short supply and spoiling due to lack of refrigeration. Sewage treatment plants in the region have been flooded and sustained damaged from the storm. Factories, chemical plants, sewage treatment plants and other facilities in the MMA have suffered severe damage. Hundreds of thousands of gallons of extremely hazardous substances have spilled into the floodwaters. There is also gasoline, diesel fuel, and oil leaking from underground storage tanks. A 95,000-ton tanker struck a bridge, breaching the hull of the vessel, which then began to leak oil into waters adjacent to the MMA. All of these issues threaten public health.

Many businesses have experienced damage to buildings and infrastructure as well as lost employees and customers. Military facilities are damaged, and assistance is needed to provide for the military community and to reconstitute the facilities. The 20-foot storm surge has breached and overtopped flood control and hurricane protection works. All transportation routes are damaged to some degree, and the port facility has also been adversely affected. Many hospitals have sustained severe damage and those that are open are overwhelmed. Schools that are not severely damaged are being used as shelters for the disaster victims. Thousands of pets, domesticated animals, and wild animals have been killed or injured, and officials have been overwhelmed with requests for assistance in finding lost pets.

There are severe economic repercussions for the whole state and region. The impact of closing the port ripples through the country. The loss of the petro-chemical supplies could raise prices and increase demand on foreign sources.

Mission Areas Activated:

<i>Prevention/Deterrence/Protection</i> –	As the storm approaches, state and local governments are given increasingly accurate forecasts and assessments of possible impacts. Forecasters have difficulty predicting the intensity of the storm prior to landfall, but urge officials to prepare for the worst. State and locals have time to execute evacuation plans.
<i>Emergency Assessment/Diagnosis</i> –	Assessment is required for infrastructure, rapid needs, search and rescue, health and medical, and navigation. Remote sensing and modeling help determine the extent of the damages.
<i>Emergency Management/Response</i> –	Some of the response actions require include search and rescue operations, mortuary services and victim identification, medical system support, debris clearance and management, temporary emergency power, transportation infrastructure support, infrastructure restoration, and temporary roofing.
<i>Incident/Hazard Mitigation</i> –	Support is required to coordinate the development of plans to execute mitigation efforts that lessen the effects of future disasters. This includes studies to assess flood and coastal erosion and intergovernmental plans to mitigate future damages.
<i>Public Protection</i> –	Measures need to be taken to control vectors that may thrive in the areas after a catastrophic hurricane. Support will be required to maintain law and order and to protect private property. Support will be required to test and analyze health and safety hazards and implement measures to protect the public.
<i>Victim Care</i> –	Care must include medical assistance; shelter and temporary housing assistance; emergency food, water, and ice provision; and sanitary facility provision.
<i>Investigation/Apprehension</i> –	Not applicable (natural disaster).
<i>Recovery/Remediation</i> –	Hazardous materials will contaminate many areas, and decontamination and site restoration will be a major challenge.

Scenario 11: Radiological Attack – Radiological Dispersal Devices

Executive Summary

Casualties	180 fatalities; 270 injuries; 20,000 detectible contaminations (at each site)
Infrastructure Damage	Near the explosion
Evacuations/Displaced Persons	Yes
Contamination	36 city blocks (at each site)
Economic Impact	Up to billions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Months to years

Scenario Overview:

General Description –

Cesium-137 (^{137}Cs) has a half-life of 33 years. It decays by both beta and gamma radiation. It is one of several known radioactive isotopes that stand out as being highly suitable for radiological terror. This isotope causes skin damage similar to burns, but the injury may be as deep within the body as on the skin. Cesium would be particularly dangerous if accidentally ingested or inhaled, even in small quantities. Cesium mimics potassium in the body. It binds to concrete and other masonry, making decontamination of such buildings extremely difficult and possibly economically infeasible. Use of ^{137}Cs in an urban setting would seriously raise the cost of cleanup.

^{137}Cs is mostly used in the form of cesium chloride (CsCl), because it is easy to precipitate. CsCl is a fairly fine, light powder with typical particle size median at about 300 microns. Fractions below 10 microns are typically less than 1%. In a Radiological Dispersal Device (RDD), most will fall out within approximately 1 to 2,000 feet (although many variables exist), but a small amount may be carried great distances, even hundreds of miles.

In this scenario, the Universal Adversary (UA) purchases stolen CsCl to make an RDD or “dirty bomb.” The explosive and the shielded ^{137}Cs sources are smuggled into the country. Detonator cord is stolen from a mining operation, and all other materials are obtained legally in the United States. Devices are detonated in three separate, but regionally close, moderate-to-large cities. The cities are physically similar with geographic topography that is flat. The results in each city are essentially the same. The contaminated region covers approximately thirty-six blocks in each city and includes the business district (high-rise street canyons), residential row houses, crowded shopping areas, and a high school. Buildings in the affected areas are principally made of concrete and brick; some are stone faced.

The entire scene is contaminated with ^{137}Cs , though not at levels causing immediate concern to first responders. Due to the size of the explosion, the radioactive contamination is blown widely

such that the ground zero area is not as radioactive as might have been expected. The detonation aerosol contains 90% of the original ^{137}Cs source with radioactive particles whose sizes range from 1 micron (or micro-meter, μm) to 150 microns – the size of most of the particles is approximately 100 microns. Larger particles either penetrate building materials in the blast zone, or drop quickly to the ground as fall-out within about 500 feet.

Variable winds of 3 to 8 miles per hour carry the radioactively contaminated aerosol throughout an area of approximately thirty-six blocks (the primary deposition zone). Complex urban wind patterns carry the contamination in unpredictable directions, leaving highly variable contamination deposition with numerous hot spots created by wind eddies and vortices. Radioactivity concentrations in this zone are on the order of 5-50 $\mu\text{Ci}/\text{m}^2$, with hot spots measuring 100-500 $\mu\text{Ci}/\text{m}^2$; however, traces of the ^{137}Cs plume carry more than 3.5 kilometers (~ 2.2 miles) on prevailing winds. Air intakes contaminate interiors of larger buildings, and negative indoor building pressure draws contaminated aerosol into buildings via cracks around windows and doors. In city one, the subway air intakes contaminate the subway system.

Timeline/Event Dynamics –

The attacks have no advance notice or intelligence that indicates their possibility. The explosions are instantaneous, but plume dispersion continues for 20 minutes while breezes navigate the complex environments before particles have fully settled. First responders do not recognize radioactive contamination for 15 minutes in city one. The explosions in cities two and three are promptly identified as “dirty bombs” – this provides some advantage to first responders and government officials in managing contamination on-scene, and in communicating with the public concerning topical contamination and spread of contamination.

Secondary Hazards/Events –

Small fires from ruptured gas lines occur in the vicinity of the blasts. Unstable building facades, rubble, and broken glass create physical hazards for rescue workers. Small amounts of lead, asbestos, and Polychlorinated Biphenyls (PCBs) are present in the air and on surfaces. Human remains present a biohazard, and some of these are very radioactive.

Key Implications:

At each site, the blast results in 180 fatalities and about 270 injured requiring medical care. In addition, up to 20,000 individuals in each primary deposition zone potentially have detectable superficial radioactive contamination.

In each blast, one building and twenty vehicles are destroyed, and eight other buildings suffer varying degrees of damage, such as minor structural damage and broken windows. Radioactive contamination is found inside and outside of buildings over an area of approximately thirty-six blocks in each city. Minor contamination may be an issue further downwind as investigators perform more thorough surveys. Most of the subway system in city one is contaminated.

Over the long term, decontamination efforts are expected to be effective, but some property owners choose demolition and rebuilding. Many square blocks will be unavailable to businesses and residents for several years until remediation is completed.

Transportation is severely hampered in each city. Bus, rail, and air transport routes are altered, and officials build highway checkpoints to monitor incoming traffic for contamination. The subway system in city one is completely closed for an extended period. Hospitals in each region, already at maximum capacity with injuries from the blasts, are inundated with up to 50,000 “worried well.”

The sewage treatment plant is quickly contaminated. Seventy-five businesses are closed for an extended duration while radioactive contamination is remediated. Local tax revenues plummet, and people discover that insurance claims are rejected. The schools in the contamination zones are closed and students meet in alternate locations. Nearby towns and cities close their doors to residents of the impacted cities for fear of contamination spread.

Decontamination, destruction, disposal, and replacement of lost infrastructure will be costly (i.e., hundreds of millions of dollars per site). The entire contaminated area may be economically depressed for years. An overall national economic downturn may occur in the wake of the attack due to a loss of consumer confidence.

In the long term, no one will suffer acute radiation syndrome, but approximately 20,000 individuals are likely to become externally contaminated at each site. Low-level contamination may enter food and water supplies. The sum of the cumulative exposures results in an increased lifetime cancer risk proportionate to the dose. Mental health services will be required.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – Efforts should include prevention of trafficking and importation of CsCl and weapon components, detection of the plot, reconnaissance of the site, protection, and deterrence measures.
- Emergency Assessment/Diagnosis*** – First responders are likely to be contaminated. The downwind aerosol dispersion will be a significant component of the hazard. Assessment and coordination efforts required are numerous.
- Emergency Management/Response*** – Actions required include mobilizing and operating incident command; overseeing victim triage; stabilizing the site; cordoning the site and managing and controlling the perimeter; providing notification and activation of special teams; providing traffic and access control; providing protection of at-risk and special populations; providing resource support and requests for assistance; providing public works coordination; providing direction and control of critical infrastructure mitigation; and providing public information, outreach, and communication activities.
- Incident/Hazard Mitigation*** – Actions required include isolating the incident scene and defining the hazard areas, building stabilization, providing fire suppression, conducting debris management and radioactive and hazardous contamination mitigation, decontaminating responders and equipment as well as local citizens, and conducting local site contamination control.
- Public Protection*** – Sheltering and/or evacuation of downwind populations will be required and must occur quickly. Protection actions required range from developing protective action recommendations and communicating them to the public to making radio-protective pharmaceutical decisions and efficiently distributing drugs.
- Victim Care*** – Injured people will require some decontamination in the course of medical treatment and, if possible, prior to hospital admission. Thousands more will likely need superficial decontamination, and both short-term and long-term medical follow-ups.
- Investigation/Apprehension*** – Actions required include dispatching personnel, conducting site cordoning and control, collecting field data and witness interviews, and performing tactical deployment and apprehension of suspects. Reconstruction of the attack should occur.
- Recovery/Remediation*** – The extent of contamination will be a major challenge because ¹³⁷Cs is highly water-soluble and is chemically reactive with a wide variety of materials, including common building materials such as concrete and stone. Several buildings (those most damaged) will be torn down and eventually rebuilt. Decontamination activities are undertaken for building exteriors and interiors, streets, sidewalks, and other areas.

Scenario 12: Explosives Attack – Bombing Using Improvised Explosive Device

Executive Summary

Casualties	100 fatalities; 450 hospitalizations
Infrastructure Damage	Structures affected by blast and fire
Evacuations/Displaced Persons	Minimal
Contamination	None
Economic Impact	Local
Potential for Multiple Events	Yes
Recovery Timeline	Weeks to months

Scenario Overview:

General Description –

In this scenario, agents of the Universal Adversary (UA) use improvised explosive devices (IEDs) to detonate bombs inside a sports arena and create a large vehicle bomb (LVB). They also use suicide bombers in an underground public transportation concourse and detonate another bomb in a parking facility near the entertainment complex. An additional series of devices is detonated in the lobby of the nearest hospital emergency room (ER).

The event is primarily designed for an urban environment, but could be adapted for more rural area events such as county fairs and other large gatherings. Casualty estimates would be reduced as a function of a reduced target population and less population density at target points.

Timeline/Event Dynamics–

The fire is ignited approximately 1 hour after the start of the entertainment event. The detonation of explosives is delayed approximately 10 to 15 minutes after the ignition of the fire in order to allow for detection, evacuation, and response of emergency services providers. The detonation of explosives at the hospital site will be the hardest to time for maximum effect and may need to be coordinated by some communication among cell members. In any case, the hospital device should be detonated before the arrival of casualties from the entertainment venue.

The timing of some of these events, with the exception of the evacuation stimulus, is not critical. The more people who evacuate the venue, the more potential explosives-related casualties are produced. If evacuation of the venue is delayed, the fire and detonation of the LVB near the venue can be expected to produce increased casualties inside the structure due to collapse, secondary and tertiary blast effects, increased exposure to products of combustion, thermal effects, and crowd surge.

Secondary Hazards/Events –

Secondary hazards include the disruption of electric power, natural gas lines, and water mains – the disruption will cause undermining of streets and flooding of underground transit ways. There

may be toxic smoke resulting from fires and explosions. There will be loss of traffic controls in the area, and fleeing citizens would likely cause traffic accidents. Media response to the area may affect responders. Since one of the bombs was disguised as an emergency response vehicle, other “legitimate” vehicles may be impeded in their response to the scene and hospitals.

Key Implications:

Casualties will result at all five incident sites and will include civilians, emergency personnel, and the suicide bombers. The LVB detonation outside the venue can be expected to result in the largest number of fatalities and injuries due to the “population density” expected. Fatalities and injuries are summarized in Table 12-1.

Incident or Location	Fatalities	Serious Injuries
Fire	8	150
Large Vehicle Bomb	35	200
Car bomb	7	40
Transportation center (subway)	8	50
Hospital	8	40

Table 12-1. *Summary of fatalities and serious injuries as a result of the bombings*

Property damage would include severe fire and blast damage to the entertainment venue, blast damage to buildings across from the entertainment venue, moderate damage to the transportation center, severe damage to vehicles and nearby buildings at the parking facility, and severe damage to the hospital ER.

Service disruption would be severe in the impacted city and would include traffic (especially the subway), public transportation, emergency services, and hospitals. The local economic impact includes loss of use of the entertainment venue for a period of 1 year during the repair of fire and blast damage.

Major health issues include severe burn treatment and therapy for the victims; permanent hearing loss; long-term tinnitus; vertigo for some exposed to the blast; and post-traumatic stress for victims, first responders, and nearby residents.

Mission Areas Activated:

<i>Prevention/Deterrence/Protection –</i>	The planning and execution of this event would require a significant level of relatively unsophisticated coordination. As such, the potential for detection in the pre-event planning stages exists.
<i>Emergency Assessment/Diagnosis –</i>	The fire would be the first recognizable indication that the attack was under way. Actions required include dispatch; agent detection; and hazard assessment, prediction, monitoring, and sampling.
<i>Emergency Management/Response –</i>	Actions required include search and rescue, alerts, activation and notification, traffic and access control, protection of special populations, resource support, requests for assistance, and public information. Establishment of a Joint Operations Center (JOC) is required.
<i>Incident/Hazard Mitigation –</i>	Primary hazards include fire; toxic atmosphere/smoke; un-detonated explosives; unstable structures; electrical hazards; and low visibility. Hospital personnel must ensure that arriving vehicles are not delivery systems for additional weapons.
<i>Public Protection –</i>	Evacuation is required as well as additional threat assessment. The area must be cordoned.
<i>Victim Care –</i>	Injuries range from “walking wounded” to multiple systems trauma, burns, and obvious fatalities. Elimination of the ER facility at the target hospital will force other facilities to receive all patients from the entertainment venue blasts.
<i>Investigation/Apprehension –</i>	Investigation can begin during the rescue phase with photo documentation of the immediate scene, victim locations, and injury patterns. Coordination of federal, state, and local investigative resources will begin early in the incident management.
<i>Recovery/Remediation –</i>	Decontamination is necessary for blood-borne pathogens at all sites. Debris removal must occur after evidence search and recovery. Restoration of the main venue could take more than 1 year (depending on the extent of the fire damage). Repair and restoration of the transportation center can be estimated at 4 months.

Note: The full-text version of this document contains overpressure templates and calculations, as well as tables outlining human injury and property damage criteria for various levels of blast overpressure.

Scenario 13: Biological Attack – Food Contamination

Executive Summary

Casualties	300 fatalities; 400 hospitalizations
Infrastructure Damage	None
Evacuations/Displaced Persons	None
Contamination	Sites where contamination was dispersed
Economic Impact	Millions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Weeks

Scenario Overview:

General Description –

The U.S. food industry has significantly increased its physical and personnel security since 2001. A successful attack could only occur following the illegal acquisition of sensitive information revealing detailed vulnerabilities of a specific production site. However, in this scenario the Universal Adversary (UA) is able to acquire these restricted documents due to a security lapse. The UA uses these sensitive documents and a high degree of careful planning to avoid apprehension and conduct a serious attack.

The UA delivers liquid anthrax bacteria to pre-selected plant workers. At a beef plant in a west coast state, two batches of ground beef are contaminated with anthrax, with distribution to a city on the west coast, a southwest state, and a state in the northwest. At an orange juice plant in a southwestern state, three batches of orange juice are contaminated with anthrax, with distribution to a west coast city, a southwest city, and a northwest city.

Timeline/Event Dynamics –

- November: The biological agent is delivered to terrorists (plant workers).
- December 3: The biological agent is inserted into ground beef and orange juice at production facilities, and the packages are shipped to affected cities.
- December 5: The first signs of patients with unknown illness appear.
- December 5-15: There is a significant influx of affected individuals into hospitals with 1,200 sick, 300 dead, and 400 hospitalized in ICU.
- December 8: Health departments, the CDC, the FDA, and the USDA begin pursuing epidemiological investigations.
- December 30: A contaminated product trace is made to ground beef and orange juice production plants. Decontamination of plants commences.
- January 5: No new cases of illness are reported.

Secondary Hazards/Events –

As a result of news of the contaminated food products, there is general public concern regarding food safety, and the “worried well” are taxing medical and laboratory facilities. The public floods into medical facilities seeking prescription drugs to prevent or recover from sickness. In addition, ground beef and orange juice sales plummet, and unemployment in these two industries rises dramatically.

Key Implications:

The attack results in 300 fatalities, 400 hospitalizations, and 1,200 illnesses. Overall property damage is moderate, and due only to decontamination of affected facilities. However, property and facility disruption (downtime) are significant due to decontamination of affected facilities.

Service disruption is significant in ground beef and orange juice industries, and some moderate disruption occurs in other food industries due to the public’s concern about food safety in general.

Although direct financial impact is significant, initial economic impact on the general economy is relatively low. However, the long-term financial impact on the beef and orange juice marketplace and associated businesses could be significant, and other food industries’ income is likely to be negatively affected by the public’s overall perception of unsafe food. The societal impact of attacks on the food supply generates demands for increased, costly, federally directed food security programs and other measures to reduce the possibility of future attacks.

Anthrax may result in fatality and serious long-term illness.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – Avoiding the attack is contingent on the prevention of infiltration of two different food production systems. Deterrence and protection require rapid disease diagnosis, and protective measures to assure food safety.
- Emergency Assessment/Diagnosis*** – Determining cause of illness and tracking the contaminated source is critical.
- Emergency Management/Response*** – Disease outbreaks in three cities spread throughout the country, which tests coordination of resources.
- Incident/Hazard Mitigation*** – Once disease outbreak occurs, decisions must be made regarding meat and juice supplies and production.
- Public Protection*** – Public protection will require testing alert and warning mechanisms, providing public information and education, and coordinating human and veterinary services.
- Victim Care*** – Victim care will require diagnosis and treatment of affected population and distribution of prophylaxis for potentially exposed populations.
- Investigation/Apprehension*** – Epidemiology will be critical to trace the source of contamination. Investigation of crime and apprehension of suspects will be needed.
- Recovery/Remediation*** – Contaminated foodstuffs require disposal. Plants and sites where anthrax was dispersed may need to be decontaminated.

Scenario 14: Biological Attack – Foreign Animal Disease (Foot & Mouth Disease)

Executive Summary

Casualties	None
Infrastructure Damage	Huge loss of livestock
Evacuations/Displaced Persons	None
Contamination	None
Economic Impact	Hundreds of millions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Months

Although this scenario depicts an intentional attack on the U.S. livestock industry, the accidental importation of certain diseases is also a hazard.

Scenario Overview:

General Description –

Foot and mouth disease is an acute infectious viral disease that causes blisters, fever, and lameness in cloven-hoofed animals such as cattle and swine. Pregnant animals often abort and dairy cattle may dry up. It spreads rapidly among such animals and can be fatal in young animals. The disease is not considered a human threat.

In this scenario, members of the Universal Adversary (UA) enter the United States to survey large operations in the livestock industries. The UA targets several locations for a coordinated bioterrorism attack on the agricultural industry. Approximately two months later, UA teams enter the United States and infect farm animals at specific locations.

The U.S. livestock transportation system is highly efficient and movements are rapid and frequent. Although the initial event will be localized at transportation facilities in several states, as the biological agent matures and the livestock are transported, the geographical area will widen to include surrounding states where the livestock are delivered.

Timelines/Event Dynamics –

The foreign animal disease (FAD) is initially detected using clinical signs and veterinary medical detection and identification. Over a period of approximately 2 weeks, federal, state, and local animal health professionals put in place surveillance, detection, containment, remediation, and disposal protocols. This is followed by surveillance, detection, containment, remediation, and disposal protocols continue until testing confirms the FAD is eradicated.

Secondary Hazards/Events –

Environmental issues regarding contaminated land and equipment must be seriously considered and addressed. Disposal of carcasses of culled animals must be done in an environmentally conscious and expeditious manner.

Key Implications:

There are no human fatalities or injuries. However, massive numbers of affected livestock are disposed of because the United States has a national policy not to vaccinate. Property damage will be limited to land mass required for disposal of euthanized livestock (burial).

All transportation into and out of the affected areas will be severely limited to prevent further dispersion of the FAD to unaffected areas. Both commercial and private/personal travel will be limited.

The extent of economic impact will depend on the ability to limit the geographical spread of the outbreak. A great economic impact will be realized in many sectors of the economy, including but not limited to agriculture. Long-term issues will be centered mostly on foreign trade.

Economic factors will include the value of the affected livestock that must be disposed of; the cost of federal, state, and local governments to identify, contain, and eradicate the FAD; the cost of disposal and remediation; the loss of revenue suffered by the commercial transportation industry; the loss of revenue suffered by the retail industry due to public perception that the FAD poses a disease risk; the loss of export markets immediately upon confirmation that the FAD exists; and the cost to renew the livestock lost to euthanasia.

The inevitable development and utilization of new technologies to include rapid detection, improved traditional vaccines/advanced molecular vaccines, and new therapeutics (including antiviral agents and other novel biomedical approaches) will lead to a physiological “hardening” of the U.S. farm animal population against FADs, thereby making them unattractive targets of bioterrorism. Although psychological impacts will be realized, human health issues will not be a consideration if a farm animal disease-causing agent is used.

Mission Areas Activated:

- Prevention/Deterrence/Protection*** – The full force of the agricultural disease protection system will be challenged in order to prevent or detect further attacks.
- Emergency Assessment/Diagnosis*** – Investigations using epidemiological trace-back, microbial forensics, and other approaches will be utilized to determine the source of the agent and identity of the perpetrators.
- Emergency Management/Response*** – If the scope of the outbreak grows, the ability to effectively conduct intrastate and interstate command and control activities, as well as the ability to successfully allocate resources, will be a challenge. States would have a need for containment, federal funding and personnel, and the use and availability of the National Guard. Federal mobilization based on the National Response Plan. Evoking the Stafford Act would be considered.
- Incident/Hazard Mitigation*** – The halt of national movement of susceptible animals may be necessary. Equitable indemnification and when to begin reconstitution of the herds leading to economic recovery will be a major consideration.
- Public Protection*** – Information must be provided in order to combat the public's fear and the spread of misinformation about the disease.
- Victim Care*** – It will be necessary to euthanize and dispose of infected and exposed animals.
- Investigation/Apprehension*** – Investigation and apprehension will entail a criminal investigation, involving law enforcement and agricultural experts.
- Recovery/Remediation*** – Ranches, feedlots, transportation modes, and other locations will require decontamination and cleanup. Cleaning and disinfecting are tools used to impede the spread of pathogenic microorganisms. All premises should be cleaned and disinfected under supervision of a regulatory animal health employee.

Scenario 15: Cyber Attack

Executive Summary

Casualties	None directly
Infrastructure Damage	Cyber
Evacuations/Displaced Persons	None
Contamination	None
Economic Impact	Millions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Weeks

Scenario Overview:

General Description –

In this scenario, the Universal Adversary conducts cyber attacks that affect several parts of the nation's financial infrastructure over the course of several weeks. Specifically, credit-card processing facilities are hacked and numbers are released to the Internet, causing 20 million cards to be cancelled; automated teller machines (ATMs) fail nearly simultaneously across the nation; major companies report payroll checks are not being received by workers; and several large pension and mutual fund companies have computer malfunctions so severe that they are unable to operate for more than a week. Individually, these attacks are not dangerous – but combined, they shatter faith in the stability of the system. Citizens no longer trust any part of the U.S. financial system and foreign speculators make a run on the dollar.

Timelines/Event Dynamics –

Several years are needed for preparation. The attack is executed over a few weeks to ensure extended press coverage and undermine confidence in the financial system. However, there are no secondary hazards/events.

Key Implications:

No fatalities, significant injuries, or property damage are expected. However, significant disruptions across many or most sectors of the financial industry do occur. The greatest impact of this event will be on the economy.

Mission Areas Activated:

<i>Prevention/Deterrence/Protection</i> –	The strength of private sector finance companies will be tested in regard to prevention, deterrence, and protection.
<i>Emergency Assessment/Diagnosis</i> –	The attack will be difficult to recognize. Initially, failures may be mistaken for normal malfunctions, and analysis will have to be performed to link failures across many parts of the financial sector.
<i>Emergency Management/Response</i> –	Emergency response will be split between (1) technically bringing systems back online and instituting business continuity process, and (2) controlling the public perception of the situation to restore confidence and prevent panic.
<i>Incident/Hazard Mitigation</i> –	None.
<i>Public Protection</i> –	None.
<i>Victim Care</i> –	Citizens and investors will look for government assurances that their losses will be made whole.
<i>Investigation/Apprehension</i> –	Using intelligence and law enforcement sources and methods, the investigators will need to determine the likely technical source and the identity of the perpetrators.

APPENDIX: Scenario Working Group Members

The Homeland Security Council receives interagency guidance via a number of Policy Coordinating Committees (PCCs). One of them is the Domestic Threat, Response, and Incident Management (DTRIM) PCC; the Scenarios Working Group (SWG) supports the DTRIM. The members of the SWG are as follows:

CHAIR: Janet K. Benini, Director of Response and Planning, White House
Homeland Security Council

Arkin, Richard	Department of Energy
Avato, Steven	Department of Justice, ATF
Bar-shalom, Tali	White House Office of Science and Technology Policy
Biersack, Walter	Department of Energy
Broun, Laurence	Department of the Interior
Companion, Tod	National Aeronautics and Space Administration
Conklin, Craig	Department of Homeland Security, FEMA
Daly, Kevin	Department of Justice, FBI
Dickson, Howard	Department of Homeland Security
Dolce, Robert	Department of State
Edelman, Phil	Department of Health & Human Services
Fancher, Raymond	Department of Justice, FBI
Finan, William	Environmental Protection Agency
Fuller, Gordon	Department of Justice, FBI
Gillin, MAJ Jeff	Department of Defense
Gosnell, William	Department of Defense, USACE
Gruber, Corey	Department of Homeland Security, Integration Staff
Guffanti, Marianne	Department of the Interior, USGS
Hastings, Thomas	Department of State
Hatchett, Richard	Department of Health & Human Services
Havens, Kathryn	National Aeronautics & Space Administration
Ippoliito, David	Department of Labor, OSHA
Irwin, William	Department of Defense, USACE
Jones, Gregg	Department of Defense
Jorgensen, Andy	Department of Defense
Kadlec, Robert	White House Homeland Security Council
Kerr, Larry	White House Office of Science and Technology Policy
Kevern, Thomas	Nuclear Regulatory Commission
Krueger, Steve	Department of Justice, FBI
Landry, Steve	Department of Homeland Security, ODP
Lim, Kent	Department of Commerce
Lowe, Tom	Department of State
Lustig, Teresa	Department of Homeland Security
Lystra, Clark	Department of Defense
MacKinney, John	Environmental Protection Agency
Maddox, Justin	Department of Energy
Malak, Patricia	Department of Homeland Security, ODP

Martin, Mark	Department of Justice, ATF
McClenney, Lucretia	Department of Veterans Administration
McCreight, Robert	Department of State
McGarry, Sherri	Department of Health & Human Services, FDA
Metzler, John	Department of Energy
Michling, Suzanne	Department of Defense
Mjones, Mark	Environmental Protection Agency
Mize, W. Keith	Department of Energy
Morzinski, Gregory	Department of Defense
Mullin, Jonathan	National Aeronautic and Space Administration
Newton, Robert	Terrorist Threat Analysis Center
Nicholas, Paul	White House Homeland Security Council
Noji, Eric	Department of Health & Human Services, CDC
Park, Tom	Department of Homeland Security, FEMA
Pavetto, Carl	Environmental Protection Agency
Peluso, Francis	Department of Transportation, FAA
Pond, Robert	Department of Homeland Security, USCG
Pratt, Britt	Department of Agriculture
Siebert, Mark	Department of Justice, ATF
Sizemore, R. Tom	Department of Veterans Administration
Smith, Alan	Department of Agriculture, APHIS
Steele, Scott	Department of Justice, FBI
Stephens, David	White House National Security Council
Taborn, Michael	Department of Transportation, FTA
Thomas, Lori	Department of Agriculture
Tupin, Edward	Environmental Protection Agency
Venkayya, Rajeev	White House Homeland Security Council
Webster, James	Department of State
Weidner, John	Department of Homeland Security
Williams, John	Department of Agriculture
Williamson, Suzanne	Department of Justice, FBI
Winters, Stephen	Department of Defense
Young, Bruce	Department of Veterans Administration

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APPENDIX I

Federal Health and Medical Resources

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Information is currently being revised
and will be available at a later date.

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APPENDIX J

Internet Sites

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Internet Sites

The Internet is rich with resources related to medical surge. A most comprehensive 75-page list of such sites was developed by the Rhode Island Department of Health and can be found at http://www.health.ri.gov/biot/web_sites.doc. The first page of that site appears at the end of this appendix. Although an excellent source of information, it will not be updated again, as the employee who developed it is no longer there.

For convenience, the MWCOG Surge Planning Team has selected a sampling of the more prominent websites from that listing:

Agency for Healthcare Research and Quality, Bioterrorism and Emerging Infections Site
<http://www.bioterrorism.uab.edu/index.htm>

Agency for Toxic Substances and Disease Registry, Public Health Service, US
Department of Health and Human Service
<http://www.atsdr.cdc.gov/>

American Red Cross
<http://www.redcross.org/>

Centers for Disease Control and Prevention
<http://www.cdc.gov/>

CDC, Bioterrorism Preparedness & Response
<http://www.bt.cdc.gov/>

CDC, Emergency Preparedness and Response Branch, Outlines CDC emergency response assets and system
<http://www.cdc.gov/nceh/emergency/default.htm>

CDC, Epidemic Intelligence Service
<http://www.cdc.gov/eis/>

CDC, National Center for Infectious Diseases
<http://www.cdc.gov/ncidod/diseases/index.htm>

CDC, Office of Health and Safety
<http://www.cdc.gov/od/ohs/default.htm>

CDC, Strategic National Stockpile Program

<http://www.bt.cdc.gov/stockpile/>

CDC, Office of Workforce policy and planning, professional community training

<http://www.phppo.cdc.gov/owpp/default.asp>

Department of Health and Human Services

<http://dhhs.gov/>

DHHS, Office of Public Health Preparedness

<http://www.hhs.gov/ophp/>

Department of Homeland Security

<http://www.dhs.gov/dhspublic/>

Department of Justice, Office for Domestic Preparedness

<http://www.ojp.usdoj.gov/odp/>

Department of Transportation, Office of Hazardous Materials Safety

<http://hazmat.dot.gov/>

EMAC, Emergency Management Assistance Compact

<http://www.emacweb.org/>

Environmental Protection Agency, Chemical Emergency Preparedness and Prevention
Office

<http://www.epa.gov/swercepp/>

<http://www.epa.gov/ceppo>

EPA, Emergency Response Team

<http://www.ert.org/>

Federal Emergency Management Agency

<http://www.fema.gov/>

FEMA, Office of National Preparedness

<http://www.fema.gov/onp/>

Metropolitan Medical Response System, DHHS, OEP

<http://www.mmrs.fema.gov>

National Disaster Medical System, Department of Health and Human Services (DHHS)

<http://ndms.dhhs.gov/index.html>

National Incident Management System (NIMS) Integration Center, FEMA/DHS

<http://www.fema.gov/nims/>

National Infrastructure Protection Center

<http://www.nipc.gov/>

National Institutes of Health

<http://www.nih.gov/>

The National Response Team, HAZMAT & Chemical Spills

<http://www.nrt.org/>

The National Toxicology Program, National Institutes of Health

<http://ntp-server.niehs.nih.gov>

Office of Counterproliferation and Chemical and Biological Defense, DOD

<http://www.acq.osd.mil/cp/welcome.html>

Pub Health Svc (DHHS) Office of Emergency Prep, Manages the National Disaster
Medical System

<http://ndms.dhhs.gov/>

US Secret Service

<http://www.treas.gov/usss/index.shtml>

Veterans Administration, Emergency Management Strategic Health Care Group

<http://www.va.gov/EMSHG/>

World Health Organization (WHO)

http://www.who.int/emc/deliberate_epi.html

State Health Department Web Sites

<http://www.phppo.cdc.gov/phtn/sites.asp#state>

<http://www.cdc.gov/mmwr/international/relres.html>

State Emergency Management Agencies Web Site

<http://www.ndpo.gov/stateema.htm>

Virginia Department of Health BT Site

<http://www.vdh.state.va.us/epi/bio.htm>

Washington D.C. Emergency Operations Plan

<http://dcema.dc.gov/info/drp.shtml>

Academic Centers for Public Health Preparedness (Information on currently 19 public health schools which are federally funded to provide some PH/BT resources and information), The Association of Schools of Public Health
<http://www.asph.org/acphp/>

Doctors for Disaster Preparedness
<http://www.oism.org/ddp/>

The Institute for Crisis, Disaster and Risk Management (ICDRM). The George Washington University
<http://www.gwu.edu/~icdrm/>

National Academic Consortium for Homeland Security, Ohio State University
<http://www.osu.edu/homelandsecurity/NACHS/>

National Center for Domestic Preparedness, Mailman School of Public Health, Columbia University
<http://www.ncdp.mailman.columbia.edu>

Abbreviations, Acronyms, and Terms, DOD
http://www.tricare.osd.mil/imtr/downloads/dmim_acr.doc
<http://www.dtic.mil/doctrine/jel/doddict/>

Abbreviations, Acronyms, and Terms, FEMA FAAT list
<http://www.fema.gov/doc/library/faatlist2002.doc>

Community Guide, Bioterrorism Preparedness Case Study, National Information Center on Health Services Research and Health Care Technology, National Library of Medicine
<http://www.nlm.nih.gov/nichsr/ihcm/case5.html>

Anthrax, Department of Defense information web site
<http://www.anthrax.osd.mil/>

State of Rhode Island and Providence Plantations
Department of Health

AS OF: 22 Mar 2005

WMD, Emergency Management and Medical Web Sites (Web posting for this document and subsequent updates)
(http://www.health.ri.gov/biot/web_sites.doc)

1. The following is intended to provide a comprehensive list of internet sites of use for emergency planning and in particular Weapons of Mass Destruction (WMD) and medical emergency planning. To be useful as a working document, the listing is divided into the following categories:

Organizations

[Federal Agencies](#) (Includes non-US national-level offices)

[International](#) (International Agencies)

[Local Emergency Management/BT/Health/WMD web sites](#)

[Private, Non-Profit, Academic Organizations, Professional Societies](#)

[Web Link Compendiums, Glossaries, Search Engines and other Resource Listings](#)

References

[Agricultural, Animal, Food, Water Issues](#)

[Business/Facility/School/Installation Information](#)

[Community/Local Planning](#)

[Decontamination](#)

[Diseases/Conditions/Agents/Treatment/Surveillance Systems](#)

[Dispensing Functions, Strategic National Stockpile and Other systems.](#)

[Equipment and Personal Protective Equipment](#)

[Federal Plans and Guidance, Laws, Regulations, Public Health Planning and Guidance](#)

[First responder guides/procedures](#)

[Hospital & Health Facilities](#)

[Incident Command System and Emergency Operations Center Tools](#)

[Individual/Public Guides & Info, Volunteers](#)

[Information Management/Public Affairs/Alert Systems](#)

[Laboratories](#)

[Legal and Law Enforcement Issues](#)

[Mental Health Issues](#)

[Mortuary Affairs](#)

[Miscellaneous](#)

[Training/Seminars/Classes/Conferences](#)

2. There is an incredible amount of information available through the internet (hence this document is currently 75 pages and growing!). As an introduction to understanding the complexity of all of the federal offices involved in WMD, go to the organizational chart at
<http://cns.miis.edu/research/cbw/domestic.htm#wmdchart>

3. To keep this list at a manageable level, some information is specifically omitted. There is a separate document which lists on line periodicals and list servers. This list is available from the author below, upon request.

4. **PLEASE NOTE - This list was maintained by a former employee of the RI Department of Health. That employee has since changed positions. This current product is the last one which will be posted at the RI Dep't of Health web site. To contact the author send an email to: gregory.banner@hhs.gov**

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APPENDIX K

Glossary

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Glossary

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

Communicable disease: An illness due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal or inanimate reservoir to a susceptible host: either directly or indirectly through an intermediate plant or animal host, vector or inanimate environment (synonym: infectious disease)

Definitive care: the most authoritative and decisive procedures, treatments or other medical intervention appropriate to the patient's condition.

Disaster (Major): As defined in the Stafford Act, a “major disaster” is any natural catastrophe (including hurricane, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), regardless of cause, any fire, flood or explosion, in any part of the United States, which at 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 government, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

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.

EMS: Emergency Medical Services

Emergency Operations Center (EOC) The EOC is used in varying ways at all levels of government and within private industry to provide coordination, directions, control or support during emergencies. Some Jurisdictions refer to EOC as Emergency Management Center (EMC)

Emergency Operations Plan (EOP): the “response” plan that an entity maintains for reacting to any hazardous event. It provides guidance for management and emergency response personnel.

Emergency Support Function (ESF): as defined in the National Response Plan, refers to a group of capabilities of Federal, State and local departments and agencies to provide the support, resources, program implementations, and services that are most likely to be needed to save lives, protect victims, and return to normal following a disaster/event. An ESF represents the primary operational level mechanism to orchestrate activities.

Epidemiology: the study of the distribution and determinants of disease in human populations. Epidemiology differs from clinical medicine in two important regards: First

epidemiologists study groups of people, not individuals. Second, epidemiologists study well people, in addition to sick people, and try to find out the crucial difference between those stricken and those spared.

ESSENCE: (Electronic Surveillance System for the Early Notification of Community-based Epidemics), a regional surveillance network for the early detection and notification of abnormal disease events that could cause high morbidity and mortality in DC, Maryland and Virginia populations. The system collects anonymous data containing health indicators, performs analysis, and notifies users when statistical anomalies occur. Data are received daily from locations such as pharmacies, hospitals, doctors' offices, clinics, grocery stores, schools, veterinarians, and web sites.

The network will establish independent surveillance nodes – operation centers – in the District of Columbia, Maryland and Virginia, with a central regional integration node operated by the Applied Physics Laboratory of Johns Hopkins University in Laurel, Md., for performing surveillance across jurisdictional boundaries. Operating 365 days a year, these nodes will provide information to local public health departments. Jurisdictions have been meeting to determine how data (that has had personal information removed) will be shared across jurisdictional boundaries.

Exercise: to have a drill, as to try out a plan, make sure everyone knows what to do

Health Information Group HIG. The HIG is a mechanism convened by NCR Health Officials to provide a discussion center for the analysis of data, review of epidemiological findings, formation of case definitions, and generation of hypotheses associated with a suspect event. As the event unfolds, the HIG will monitor and track confirmed and suspected cases, and coordinate NCR medical issues associated with the medical surge.

Hospice: a special form of care designed to provide comfort and support to patients and their families when a terminal illness no longer responds to cure-oriented treatments.

Hospital Incident Command HIC: A HIC is used by hospitals or other healthcare facilities to provide coordination, directions, control or support during emergencies. The structure is similar to the traditional Incident Command System.

Hypothesis: an educated guess about an association that is treatable in a scientific investigation.

Incident: an actual or impending hazard impact, caused either by humans 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 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 to organize field level operations.

Identification: presents the principal clinical features of a disease and differentiates this disease from others which may have a similar clinical picture.

Infectious agent: the specific pathogen or pathogens that cause a disease.

Interoperability: involves communication systems (telephone, radio, computer, etc.) that are able to work together or communicate with one another (as across agencies, jurisdictions, etc.)

Isolation: as applied to patients, isolation represents separation, for the period of communicability, of infected persons or animals from others in such places and under such conditions as to prevent or limit the direct or indirect transmission of the infectious agent from those infected to those who are susceptible to infections or applies to restrictions on the health contacts of an infectious case.

Medical asset: something used in the practice of medicine, including supplies (like pharmaceuticals), medical personnel, buildings and equipment.

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).

Multi-jurisdictional 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.

NCR: national capital region

NIMS: National Incident Management System

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 impact. It is a continuous process, involving key leaders of government and private industry and community.

Private Sector: Organizations and entities that are not part of any governmental structure, including for-profit, non-profit, formal and informal structures.

Prophylaxis: a measure taken for the prevention of a disease. For example, vaccinations are a form of prophylaxis.

Quarantine: Restriction of the activities of well persons or animals who have been exposed to a case of communicable disease during its period of communicability (i.e.,

contacts) to prevent disease transmission during the incubation period of an infectious disease.

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

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 and activities designed to limit the loss of life, personal injury, property damage, and other unfavorable outcomes.

Scenario: an imagined sequence of possible events used in this document to educate, test, and exercise responses to a biological, radiological, chemical or nuclear event.

SNS: Strategic National Stockpile

State: in this paper, state is used to refer to Maryland, Virginia or the District of Columbia.

STD: Sexually Transmitted Disease

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

Surge Capacity: the ability to evaluate and care for a greatly 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.

Surveillance of disease: as distinct from surveillance of persons, surveillance of disease is the continuing scrutiny of all occurrences and spread of a disease that are pertinent to effective control; included are the systematic collection and evaluation of

- Morbidity and mortality reports
- Special reports of field investigations of epidemics and individual cases
- Isolation and identification of infectious agents by laboratory
- Data concerning the availability, use and untoward effects of vaccines and toxoids, immune globulins, insecticides and other substances
- Information regarding immunity levels in segments of populations
- Other relevant epidemiologic data

The procedure applies to all jurisdictional levels of public health from local to international.

Syndromic Surveillance: surveillance using health-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response. Though historically syndromic surveillance has been utilized in situations where resources are to target investigation of potential cases, its utility for detecting outbreaks associated with bioterrorism is increasingly being explored by public health.

System: a clearly described function structure, including defined processes that coordinate otherwise diverse parts to achieve a common goal.

Tiers: for the purposes of this document, the six-tier construct theoretically depicts the various levels of health and medical asset management during response to an emerging pathogen, unusual medical indicators, reported diseases, mass casualty or other complex incidents. The tiers range from the individual “event” such as a small outbreak involving one jurisdiction or health care facility or one local health department, to the coordination of Federal assistance for an incident involving the NCR. The tiers are used to describe in a very general fashion how the medical community coordinates response.

Threat: the likelihood that a hazard will occur.

Triage: the process of sorting people based on their need for immediate medical treatment. Triage is done in emergency rooms, disasters and wars when limited medical resources must be allocated to maximize the number of survivors.

UASI: Urban Area Security Initiative, a Federal grant program for homeland security, aimed at 50 metropolitan centers designated as high-risk, including the National Capital Region.

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APPENDIX L

Memoranda of Understanding

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District of Columbia Hospital Association
Mutual Aid Memorandum of Understanding
September 27, 2001

I. Introduction and Background

As the nation's capital, and a world capital, the District of Columbia is susceptible to disasters, both natural and man-made, that could exceed the resources of any individual District hospital. A disaster could result from incidents generating an overwhelming number of patients, from a smaller number of patients whose specialized medical requirements exceed the resources of the impacted facility (e.g., hazmat injuries, pulmonary, trauma surgery, etc.), or from incidents such as building or plant problems resulting in the need for partial or complete hospital evacuation.

II. Purpose of Mutual Aid Memorandum of Understanding

The mutual aid support concept is well established and is considered "standard of care" in most emergency response disciplines. The purpose of this mutual aid support agreement is to aid hospitals in their emergency management by authorizing the Hospital Mutual Aid System (H-MAS). H-MAS addresses the loan of medical personnel, pharmaceuticals, supplies, and equipment, or assistance with emergent hospital evacuation, including accepting transferred patients.

This Mutual Aid Memorandum of Understanding (MOU) is a voluntary agreement among the hospital members of the District of Columbia Hospital Association (DCHA) for the purpose of providing mutual aid at the time of a medical disaster. For purposes of this MOU, a **disaster** is defined as an overwhelming incident that **exceeds the effective response capability** of the impacted health care facility or facilities. An incident of this magnitude will almost always involve the District of Columbia Emergency Management Agency (DC EMA) and Department of Health (DOH). The disaster may be an "external" or "internal" event for hospitals and **assumes that each affected hospital's emergency management plans have been fully implemented.**

This document addresses the relationships between and among hospitals and is intended to augment, not replace, each facility's disaster plan. The MOU also provides the framework for hospitals to coordinate as a single H-MAS community in actions with DC EMA, DOH and EMS during planning and response. This document does not replace but rather supplements the rules and procedures governing interaction with other organizations during a disaster, e.g., law enforcement agencies, the District DC EMA, DOH, fire departments, American Red Cross, etc.

By signing this Memorandum of Understanding each hospital is evidencing its intent to abide by the terms of the MOU in the event of a medical disaster as described above. The terms of this MOU are to be incorporated into the hospital's emergency management plans.

III. Definition of Terms

Command Post:	An area established in a hospital during an emergency that is the facility's primary source of administrative authority and decision-making.
Clearinghouse	A communication and information center that has H-MARS network capabilities allowing for the immediate determination of available hospital resources at the time of a disaster. The clearinghouse must be operational 24 hours a day and requires daily maintenance. The clearinghouse does not have any decision-making or supervisory authority but merely collects and disseminates information, and performs regular radio checks of the H-MARS system.
Donor Hospital:	The hospital that provides personnel, pharmaceuticals, supplies, or equipment to a facility experiencing a medical disaster. Also referred to as the patient-receiving hospital when involving evacuating patients.
H-MAS:	Hospital Mutual Aid System
H-MARS:	Hospital Mutual Aid Radio System – The primary communication system used by hospitals to communicate during an emergency.
Impacted Hospital:	The hospital where the disaster occurred or disaster victims are being treated. Referred to as the recipient hospital when pharmaceuticals, supplies, or equipment are requested, or as the patient-transferring hospital when the evacuation of patients is required.
Medical Disaster:	An incident that exceeds a facility's effective response capability or cannot appropriately resolve solely by using its own resources. Such disasters will very likely involve the District of Columbia Emergency Management Agency (EMA) and Department of Health (DOH) and may involve loan of medical and support personnel, pharmaceuticals, supplies, and equipment from another facility, or, the emergent evacuation of patients.
Partner ("Buddy")	The designated facility that a hospital communicates with as a facility's "first call for help" during a medical disaster (developed through an optional partnering arrangement).
Patient-Receiving Hospital:	The hospital that receives transferred patients from a facility responding to a disaster. When patients are evacuated, the receiving facility is referred to as the patient-receiving hospital. When personnel or materials are involved, the providing hospital is referred to as the donor hospital.

Patient-Transferring Hospital:	An impacted facility. The hospital that evacuates patients to a patient-receiving facility in response to a medical disaster. Also referred to as the recipient hospital when personnel and materials are moved to the facility.
Participating Hospitals	Healthcare facilities that have fully committed to H-MAS.
Recipient Hospital:	The impacted facility. The hospital where disaster patients are being treated and has requested personnel or materials from another facility. Also referred to as the patient-transferring hospital when evacuating/transferring patients from the facility during a medical disaster.

IV. General Principles of Understanding

1. Participating Hospitals: Each hospital designates a representative to attend the DCHA Hospital Mutual Aid System meetings and to coordinate the mutual aid initiatives with the individual hospital's emergency preparedness/management plans. Hospitals also commit to participating in H-MAS exercises and maintaining their radio links to H-MARS.
2. Partner Hospital Concept: Each hospital has the option of linking to a designated partner or "buddy" hospital as the hospital of 'first call for help' during a disaster. The hospitals comprising each partner-network should develop, prior to any medical disaster, methods for coordinating communication between themselves, responding to the media, and identifying the locations to enter their buddy hospital's security perimeter.
3. Implementation of Mutual Aid Memorandum of Understanding: A health care facility becomes a participating hospital when an authorized administrator signs the MOU. During a medical emergency, only the authorized administrator (or designee) or command center at each hospital has the authority to request or offer assistance through H-MAS. Communications between hospitals for formally requesting and volunteering assistance should therefore occur among the senior administrators (or designees) or respective command centers.
4. Command Center: The impacted facility's command center is responsible for informing the clearinghouse of its situation and defining needs that cannot be accommodated by the hospital itself or any existing partner hospital. The senior administrator or designee is responsible for requesting personnel, pharmaceuticals, supplies, equipment, or authorizing the evacuation of patients. The senior administrator or designee will coordinate both internally, and with the donor/patient-accepting hospital, all of the logistics involved in implementing assistance under this Mutual Aid MOU. Logistics include identifying the number and specific location where personnel, pharmaceuticals, supplies, equipment, or patients should be sent, how to enter the security perimeter, estimated time

interval to arrival and estimated return date of borrowed supplies, etc.

5. Clearinghouse: Each hospital will participate in an annual H-MAS exercise that includes communicating to the clearinghouse a set of data elements or indicators describing the hospital's resource capacity. (See attached forms, pp. 13-15.) The Clearinghouse will serve as an information center for recording and disseminating the type and amount of available resources at each hospital. During a disaster drill or emergency, each hospital will report to the Clearinghouse the current status of their indicators. (For a more detailed account of the Clearinghouse's responsibilities, see "Clearinghouse Requirements.") Hospitals also participate in daily radio checks performed by the Clearinghouse.
6. Hospital Indicators: A set of hospital resource measures that are reported to the Communication Center during a disaster drill or actual disaster. The indicators are designed to catalogue hospital resources that could be available for other hospitals during a disaster.
7. Documentation: During a disaster, the recipient hospital will accept and honor the donor hospital's standard requisition forms. Documentation should detail the items involved in the transaction, condition of the material prior to the loan (if applicable), and the party responsible for the material.
8. Authorization: The recipient facility will have supervisory direction over the donor facility's staff, borrowed equipment, etc., once they are received by the recipient hospital.
9. Financial & Legal Liability: The recipient hospital will assume legal responsibility for the personnel and equipment from the donor hospital during the time the personnel, equipment and supplies are at the recipient hospital. The recipient hospital will reimburse the donor hospital, to the extent permitted by federal law, for all of the donor hospital's costs determined by the donor hospital's regular rate. Costs includes all use, breakage, damage, replacement, and return costs of borrowed materials, for personnel injuries that result in disability, loss of salary, and reasonable expenses, and for reasonable costs of defending any liability claims, except where the donor hospital has not provided preventive maintenance or proper repair of loaned equipment which resulted in patient injury. Reimbursement will be made within ninety days following receipt of the invoice.

Patient-accepting hospitals assume the legal and financial responsibility for transferred patients upon arrival into the patient-accepting hospital.

10. Communications: Hospitals will collaborate on the H-MARS radio communication system to ensure a dedicated and reliable method to communicate with the Clearinghouse and other hospitals. The back-up conference call landline telephone system may be used as a semi-secure system for discussing sensitive information.
11. Public Relations: Each hospital is responsible for developing and coordinating with other hospitals and relevant organizations the media response to the disaster. Hospitals are encouraged to develop and coordinate the outline of their response prior to any disaster. The partner hospitals should be familiar with each other's mechanisms for addressing the media. The response should include reference to the fact that the situation is being addressed in a manner agreed upon by a previously established mutual aid protocol.
12. Emergency Management Committee Chairperson: Each hospital's Emergency Management Committee Chairperson is responsible for disseminating the information regarding this MOU to relevant hospital personnel, coordinating and evaluating the hospital's participation in exercises of the mutual aid system, and incorporating the MOU concepts into the hospital's emergency management plan.
13. Hold Harmless Condition: The recipient hospital should hold harmless the donor hospital for acts of negligence or omissions on the part of the donor hospital in their good faith response for assistance during a disaster. The donor hospital, however, is responsible for appropriate credentialing of personnel and for the safety and integrity of the equipment and supplies provided for use at the recipient hospital.

V. General Principles Governing Medical Operations, the Transfer of Pharmaceuticals, Supplies or Equipment, or the Evacuation of Patients

1. Partner hospital concept: each hospital has the option of designating a partner or *buddy* hospital that serves as the hospital of "first call for help. During a disaster, the requesting hospital may first call its pre-arranged partner hospital for personnel or material assistance or to request the evacuation of patients to the partner hospital. The donor hospital will inform the requesting hospital of the degree and time frame in which it can meet the request.
2. Clearinghouse: the recipient hospital (patient-transferring hospital) is responsible for notifying and informing the Clearinghouse of its personnel or material needs or its need to evacuate patients and the degree to which its partner hospital is unable to meet these needs. Upon the request by the senior administrator or designee of the impacted hospital, the Clearinghouse will contact the other participating hospitals to determine the availability of additional personnel or material resources, including the availability of beds, as required by the situation. The

recipient hospital will be informed as to which hospitals should be contacted directly for assistance that has been offered. The senior administrator (or designee) of the recipient or patient-transferring hospital will coordinate directly with the senior administrator (or designee) of the donor or patient-accepting hospital for this assistance.

3. Initiation of transfer of personnel, material resources, or patients: Only the senior hospital administrator or designee at each hospital has the authority to initiate the transfer or receipt of personnel, material resources, or patients. The senior administrator (or designee) and medical director, in conjunction with the directors of the affected services, will make a determination as to whether medical staff and other personnel from another facility will be required at the impacted hospital to assist in patient care activities.

Personnel offered by donor hospitals should be limited to staff that are **fully accredited or credentialed in the donor institution**. No resident physicians, medical/nursing students, or in-training persons should be volunteered. In the event of the evacuation of patients, the medical director of the patient-transferring hospital will also notify the District fire department (DCFD) of its situation and seek assistance, if necessary, from the District EMS. (DCFD will be requested to notify the DC Emergency Management Agency and the DC Department of Health.)

VI. Specific Principles of Understanding

A. Medical Operations/Loaning Personnel

1. Communication of request: The request for the transfer of personnel initially can be made verbally. The request, however, must be followed up with written documentation. This should ideally occur prior to the arrival of personnel at the recipient hospital. The recipient hospital will identify to the donor hospital the following:
 - a. The type and number of requested personnel.
 - b. An estimate of how quickly the request is needed.
 - c. The location where they are to report.
 - d. An estimate of how long the personnel will be needed.
2. Documentation: The arriving donated personnel will be required to present their donor hospital identification badge at the site designated by the recipient hospital's command center. The recipient hospital will be responsible for the following:
 - a. Meeting the arriving donated personnel (usually by the recipient hospital's security department or designated employee).
 - b. Confirming the donated personnel's ID badge with the list of

- personnel provided by the donor hospital.
- c. Providing additional identification, e.g., "visiting personnel" badge, to the arriving donated personnel.

The recipient hospital will accept the professional credentialing determination of the donor hospital but only for those services for which the personnel are credentialed at the donor hospital.

3. Supervision: The recipient hospital's senior administrator or designee, (the command center) identifies where and to whom the donated personnel are to report, and professional staff of the recipient hospital supervise the donated personnel. The supervisor or designee will meet the donated personnel at the point of entry of the facility and brief the donated personnel of the situation and their assignments. If appropriate, the "emergency staffing" rules of the recipient hospital will govern assigned shifts. The donated personnel's shift, however, should not be longer than the customary length practiced at the donor hospital.
4. Legal and financial liability: Liability claims, malpractice claims, disability claims, attorneys' fees, and other incurred costs are the responsibility of the recipient hospital. An extension of liability coverage will be provided by the recipient facility, to the extent permitted by federal law, insofar as the donated personnel are operating within their scope of practice. The recipient hospital will reimburse the donor hospital for the salaries of the donated personnel at the donated personnel's rate as established at the donor hospital if the personnel are employees being paid by the donor hospital. The reimbursement will be made within ninety days following receipt of the invoice.

The Medical Director of the recipient hospital will be responsible for providing a mechanism for granting emergency credentialing privileges' for physician, nurses and other licensed healthcare providers to provide services at the recipient hospital

5. Demobilization procedures: The recipient hospital will provide and coordinate any necessary demobilization procedures and post-event stress debriefing. The recipient hospital is responsible for providing the donated personnel transportation necessary for their return to the donor hospital.

B. Transfer of Pharmaceuticals, Supplies or Equipment

1. Communication of Request: The request for the transfer of pharmaceuticals, supplies, or equipment initially can be made verbally. The request, however, must be followed up with a written communication.

This should ideally occur prior to the receipt of any material resources at the recipient hospital. The recipient hospital will identify to the donor hospital the following:

- a. The quantity and exact type of requested items.
- b. An estimate of how quickly the request is needed.
- c. Time period for which the supplies will be needed.
- d. Location to which the supplies should be delivered.

The donor hospital will identify how long it will take them to fulfill the request. Since response time is a central component during a disaster response, decision and implementation should occur quickly.

2. Documentation: The recipient hospital will honor the donor hospital's standard order requisition form as documentation of the request and receipt of the materials. The recipient hospital's security office or designee will confirm the receipt of the material resources. The documentation will detail the following:

- a. The items involved.
- b. The condition of the equipment prior to the loan (if applicable).
- c. The responsible parties for the borrowed material.

The donor hospital is responsible for tracking the borrowed inventory through their standard requisition forms. Upon the return of the equipment, etc, the original invoice will be co-signed by the senior administrator or designee of the recipient hospital recording the condition of the borrowed equipment.

3. Transporting of pharmaceuticals, supplies, or equipment: The recipient hospital is responsible for coordinating the transportation of materials both to and from the donor hospital. This coordination may involve government and/or private organizations, and the donor hospital may also offer transport. Upon request, the receiving hospital must return and pay the transportation fees for returning or replacing all borrowed material.
4. Supervision: The recipient hospital is responsible for appropriate use and maintenance of all borrowed pharmaceuticals, supplies, or equipment.

5. Financial and legal liability: The recipient hospital, to the extent permitted by federal law, is responsible for all costs arising from the use, damage, or loss of borrowed pharmaceuticals, supplies, or equipment, and for liability claims arising from the use of borrowed supplies and equipment, except where the donor hospital has not provided preventive maintenance or proper repair of loaned equipment which resulted in patient injury.
6. Demobilization procedures: The recipient hospital is responsible for the rehabilitation and prompt return of the borrowed equipment to the donor hospital.

C. Transfer/Evacuation of Patients

1. Communication of request: The request for the transfer of patients initially can be made verbally. The request, however, must be followed up with a written communication prior to the actual transferring of any patients. The patient-transferring hospital will identify to the patient-accepting hospital:
 - a. the number of patients needed to be transferred.
 - b. the general nature of their illness or condition.
 - c. any type of specialized services required, e.g., ICU bed, burn bed, trauma care, etc.
2. Documentation: The patient-transferring hospital is responsible for providing the patient-receiving hospital with the patient's complete medical records, insurance information and other patient information necessary for the care of the transferred patient. The patient-transferring hospital is responsible for tracking the destination of all patients transferred out.
3. Transporting of patients: The patient-transferring hospital is responsible for coordinating and financing the transportation of patients to the patient-receiving hospital. The point of entry will be designated by the patient-receiving hospital's senior administrator or designee. Once admitted, that patient becomes the patient-receiving hospital's patient and under care of the patient-receiving hospital's admitting physician until discharged, transferred or reassigned. The patient-transferring hospital is responsible for transferring of extraordinary drugs or other special patient needs (e.g., equipment, blood products) along with the patient if requested by the patient-receiving hospital.

4. Supervision: The patient-receiving hospital will designate the patient's admitting service, the admitting physician for each patient, and, if requested, will provide at least temporary courtesy privileges to the patient's original attending physician.
5. Financial and Legal Liability: Upon admission, the patient-receiving hospital is responsible for liability claims originating from the time the patient is admitted to the patient-accepting hospital. Reimbursement for care should be negotiated with each hospital's insurer under the conditions for *admissions without precertification requirements* in the event of emergencies.
6. Notification: The patient-transferring hospital is responsible for notifying both the patient's family or guardian and the patient's attending or personal physician of the situation. The patient-receiving hospital may assist in notifying the patient's family and personal physician.

D. Clearinghouse Function

The H-MARS provides the means for the hospitals to coordinate among themselves, and as a unit to integrate with DC EMA, DOH, Police and EMS during a disaster event.

The Clearinghouse serves as the data center for collecting and disseminating current information about equipment, bed capacity and other hospital resources during a disaster. (See attached form, pp. 13-15.) The information collected by the Communication Center is to be used only for disaster preparedness and response.

In the event of a disaster or during a disaster drill, hospitals will be prepared to provide the communication center the following information:

1. The total number of injury victims your Emergency Department can accept, and if possible, the number of victims with minor and major injuries
2. Total number of operating beds **current available to accept patients** in the following units:

a. general medical (adult)	i. burn
b. general surgical (adult)	j. psychiatric
c. general medical (pediatric)	k. subacute care
d. general surgical (pediatric)	l. skilled care beds
e. obstetrics	m. operating suites
f. cardiac intensive care	

- g. neonatal intensive care
- h. pediatric intensive care

3. The number of items **currently available for loan or donation** to another hospital:

- a. respirators
- b. IV infusion pumps
- c. dialysis machines
- d. hazmat decontamination equipment
- e. MRI
- f. CT scanner
- g. hyperbaric chamber
- i. ventilators
- j. external pacemakers
- k. atropine
- l. kefzol

4. The following number of personnel **currently available for loan** to another hospital:

Physicians: Anesthesiologists
Emergency Medicine
General Surgeon
OB-GYN
Pediatricians
Trauma Surgeons

Registered Nurses: Emergency
Critical Care
Operating Room
Pediatrics

Other Personnel: Maintenance Workers
Mental Health Workers
Respiratory Therapists
Plant Engineers
Security Workers
Social Workers
Others as indicated

E. Partner Hospital Concept (Optional)

Each "paired" hospital should standardize a set of contacts to facilitate communications during a disaster.

The procedural steps in the event of a disaster are as follows:

1. Determine the total number of patients the emergency department and hospital can accept, and if possible, the total number of patients with major and minor injuries.
2. Impacted hospital contacts partner hospital to determine availability of beds, equipment, supplies, and personnel. (Contacts secondary partner hospital if primary hospital is unable to meet needs.)
3. Impacted hospital contacts the clearinghouse and notifies the center of its needs, how they are being met, and any unmet needs.
4. At the request of the impacted hospital, the clearinghouse will contact other hospitals to alert them to the situation and to begin an inventory for any possible or actual unmet needs.

PRIMARY DATA COLLECTION FORM

In the event of an emergency, record the time of communication, the total number of injury victims the receiving hospital can accept, and, if possible, the number of major* and minor** injury victims the hospital can accept.

Date:

Page #:

Hospital	Time	Total Number of Patients	Minor Injuries	Major Injuries	Comments
Bethesda					
CNMC					
DC General					
GW					
GT					
GSE					
HUH					
Hadley					
MalcomGrow					
NRH					
Psyche Ins.					
Providence					
Sibley					
St. Es					
VA					
WRAMC					
WHC					

* "Major injury victims": those expected to require admission and/or significant medical/ hospital resources (operating room, critical care, extensive orthopedics intervention, etc.)

** "Minor injury victims": those expected to be treated and released or require very little medical/ hospital resources.

SECONDARY DATA COLLECTION FORM*

If time or need permits, request the following information from the donating hospital.

Hosp Name: _____

Person completing form: _____

Date: _____

Time: _____

Number of Open/Available Beds		Total Available to Donate	
General medical (adult)		Respirators	
General surgical (adult)		IV Infusion Pumps	
General medical (pediatric)		Dialysis Machines	
General surgical (pediatric)		Hazmat De-contamination Equipment	
Obstetrics		MRIs	
Cardiac ICU		CT Scanners	
NICU		Hyperbaric Chamber	
PICU		Ventilators	
Burn		external pacemakers	
Psychiatric		atropine	
Trauma		kefzol	
OR Suites			
Skilled Nursing & Subacute Care			

* During an actual disaster or disaster drill, hospitals should complete the above form with the most current information available and have this information ready for dissemination to EMA, DCFD, requesting hospitals, and the H-MARS clearinghouse.

SECONDARY DATA COLLECTION FORM*

Hosp. Name: _____

Person completing form: _____

Date: _____

Time: _____

Physician	Number of Personnel Currently Available to Loan/Donate to Partner Hosp.*
Anesthesiology	
Emergency Medicine	
General Surgeon	
General Medicine	
OB-GYN	
Pediatrician	
Trauma Surgeon	
Other as indicated	
Registered Nurses	
Emergency	
Critical Care	
Operating Room	
Pediatrics	
Other as indicated	
Other Personnel	
Maintenance Workers	
Mental Health Workers	
Respiratory Therapists	
Plant Engineers	
Security Personnel	
Social Workers	
Other as indicated	

* During an actual disaster or disaster drill, hospitals should complete the above form with the most current information available and have this information ready for dissemination to EMA, DCFD, requesting hospitals, and the H-MARS clearinghouse.

**MONTGOMERY COUNTY HOSPITALS COLLABORATIVE TASK FORCE
HOSPITAL EMERGENCY MEDICAL MUTUAL AID SYSTEM (EMAS)
MEMORANDUM OF UNDERSTANDING (MOU)**

I. INTRODUCTION

As a major population center and destination, the Montgomery County Area is susceptible to disasters, both natural and man-made, that could exceed the resources of any individual hospital in the County. A disaster could result from incidents generating an overwhelming number of patients, (e.g., major transportation accident, terrorism, etc.), from a smaller number of patients whose specialized medical requirements exceed the resources of the impacted facility (e.g., hazmat injuries, pulmonary, trauma surgery, etc.), or from incidents such as building or plant problems resulting in the need for partial or complete evacuation.

II. PURPOSE

This MOU is a voluntary agreement among the hospitals and other health service providers in Montgomery County, Maryland, as listed on Exhibit A attached hereto and incorporated herein by this reference (collectively “Participating Hospitals,” or individually a, “Participating Hospital”) to provide mutual aid at the time of a “Medical Disaster.” For purposes of this MOU, a Medical Disaster is defined as an overwhelming incident that exceeds the effective response capability of the impacted Participating Hospital. This MOU also describes the relationship between the Participating Hospitals and the Montgomery County Fire Rescue Service, the Montgomery County Department of Health and Human Services (“Local Government Services”) through public health services and through the individual Participating Hospitals affiliation with area-wide communication system established by the Maryland Institute of Emergency Medical Services System (MIEMSS).

III. MAINTENANCE OF INDIVIDUAL HOSPITAL’S DISASTER PROGRAM

This MOU is not intended to replace a Participating Hospital’s disaster plan or existing MOU’s (NDMS). Each Participating Hospital has the responsibility for maintaining it’s own emergency management plan that includes, at a minimum, provisions for the care of patients in an emergency situation or Medical Disaster, maintenance of disaster equipment, appropriate training of staff and the implementation of an internal incident command system based on the principles of the Hospital Emergency Incident Command System (HEICS).

Additionally, each Participating Hospital agrees to participate in periodic exercises conducted by Montgomery County Fire Rescue Services, and other local and state emergency management agencies.

IV. HOSPITAL PARTICIPATION IN MONTGOMERY COUNTY HOSPITALS COLLABORATIVE TASK FORCE ON WEAPONS OF MASS DESTRUCTION

The Chief Executive Officer of each Participating Hospital will designate a representative to attend the Montgomery County Hospitals Collaborative Task Force on Weapons of Mass Destruction meetings for the purpose of developing operational procedures and coordinating mutual aid initiatives. This Task Force will also be represented at the Montgomery County Department of Health and Human Services Hospital Group and the Montgomery County Emergency Management Group Planning Team in an effort to foster coordination with other disaster relief and emergency medical providers and public agencies involved in disaster response efforts.

V. COMMUNICATION

In the event of a Medical Disaster, MIEMSS serves, among other functions, as the primary data center for collecting and disseminating current information about equipment, bed capacity and other participating hospital resources. This information will be communicated through EMRC/FRED. The second means of communication between Participating Hospitals during an event or drill is the PS2000 Hospital Radio Network (HRN). Each Participating Hospital will provide and communicate information during drills or disasters to EMRC/FRED and the PS2000 HRN. To accomplish this, each Participating Hospital will agree to use the equipment necessary to participate in the following communication systems:

- A. HOSPITAL RADIO NETWORK (HRN/PS2000)** – the Hospital Emergency Radio Network, operating on UHF radio frequencies in the 800 MHz range that allows for hospital to hospital, Field command to hospital communication, Public Health to Hospital communication as well as communication between each of the emergency operations command centers of the Participating Hospitals. The HRN will be tested each Monday at 1300 hours.
- B. FACILITIES RESOURCES EMERGENCY DATABASE (FRED)** – an internet-based hospital status system used by all hospitals in the State of Maryland to report bed, pharmaceutical and other emergency resources in real time. Messaging functions via FRED can reach all hospitals simultaneously. All Participating Hospitals will monitor FRED on a round-the-clock basis.
- C. EMERGENCY MEDICAL RESOURCE CENTER (EMRC)** – an 800μHz encrypted radio system controlled by MIEMSS to provide medical/treatment related communications between ambulances and hospitals.
- D. MONTGOMERY COUNTY EMS RADIO SYSTEM** – an 800μHz encrypted radio system controlled by Montgomery County Fire Rescue communications to facilitate ambulance to hospital patient transfer information that does not involve a medical consult. Likewise the system can be used to announce an event or incident in simulcast form from the Montgomery County Public Safety Communications Center or a field incident commander to all hospitals.
- E. COLLABORATIVE TRIAGE CHART SYSTEM**– a triage chart system developed by the Collaborative that allows tracking of patients from hospital to hospital.

- F. ROUTINE COMMUNICATION-** each hospital will provide regular updates of emergency contact personnel, phone and fax numbers, and other data as requested by the Montgomery County Hospitals Collaborative Task Force.
- G. MONTGOMERY COUNTY PUBLIC HEALTH/JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LAB SYNDROMIC SURVEILLANCE SYSTEM** – an encrypted, restricted use database that is continually monitored by the Montgomery County Department of Health and Human Services for the sole purpose of providing syndromic surveillance. The signs and symptoms of the patient as well as demographic data at the time of presentation to participating hospital emergency departments are extracted and used as indicators of infectious disease outbreaks, agents of bio-terror, or agents associated with weapons of mass destruction.

VI. ACTIVATION OF EMERGENCY MUTUAL AID SYSTEM (EMAS)

- A. ACTIVATION OF EMAS WHEN FEDERAL AND STATE TERROR THREAT LEVELS ARE RAISED TO THREATCOM LEVEL RED.**

When Homeland Security raises the Federal Alert Threat-com Level to “Red,” participating hospitals will activate the HOSPITAL RADIO NETWORK (HRN/PS2000) SYSTEM to establish direct communications with each of the facilities’ Command Centers. Preparation levels will be based on the actual events that have occurred and the potential impact on Participating Hospitals.

ACTIVATION OF EMAS IN THE EVENT OF A MASS OR MASSIVE CASUALTY INCIDENT WHETHER NATURAL OR MAN MADE.

In the event of a mass or massive casualty incident, the HRN/PS2000 system may be activated by Montgomery County Fire Rescue or the Montgomery County Department of Health and Human Services. Additionally, any participating hospital may request the activation of the system via the EMS radio located in the emergency department of each participating hospital. This activation is accomplished by switching, group 10 HANNC, and request all hospitals to notify their respective emergency managers to activate the HRN/PS2000.

- B. EMAS COMMAND STRUCTURE RELATED TO EVENT AND IMPACT ON ONE OR MORE PARTICIPATING HOSPITALS.**

If a Medical Disaster impacts one or more, but not all participating hospitals, the hospital furthest removed and not involved in the event shall serve as the command hospital. Additional support may be obtained via the EMRC radio system, the FRED systems of MIEMSS, or other (meaning local, state, or federal agencies).

The command hospital will assess the needs of the emergent hospital(s), determine the availability of resources from other hospitals not involved in the event and facilitate relief to the emergent hospital(s) if not provided by the MIEMSS/EMRC system of the state of Maryland.

In the event of a Medical Disaster that is a natural or environmental disaster, all Participating Hospitals will automatically activate the HRN/PS2000 system and role call will be conducted by the hospital/agency responsible for the current weekly radio check.

VII. MUTUAL AID RECEIVED BY OR PROVIDED TO A PARTICIPATING HOSPITAL

A. AUTHORITY AND COMMUNICATION

Only the Incident Commander of a Participating Hospital that has a need for staff or equipment (“Recipient Hospital”) has the authority to initiate the request for transfer of patients or receipt of personnel or material resources pursuant to this MOU. This request will initially be made verbally or electronically to the HHS Operations representative in the Montgomery County EOC but must be followed by written documentation specifying such information as the type and quantity of supplies or personnel needed, an estimate of how quickly they are needed, the time period for which they will be needed and the location to which they should report or be delivered. The Montgomery County EOC will deliver this request to the other Participating Hospitals and coordinate the response to the Recipient Hospital from the responding Participating Hospital(s) with staff or equipment to be provided to the Recipient Hospital. A responding Participating Hospital that sends supplies, equipment or staff to another Participating Hospital is hereinafter called a “Transferring Hospital.”

B. VOLUNTEER PERSONNEL

Personnel employed by, contracted with or on the staff of the Transferring Hospital who are dispatched to a Recipient Hospital shall be limited to staff that are certified, licensed, privileged and/or credentialed in the Transferring Hospital, as appropriate, given such staffs’ professional scope of practice. Transferring Hospital employees who are dispatched to a Recipient Hospital will act in the capacity of a Volunteer with respect to the Recipient Hospital and for all purposes set forth herein will function as a Volunteer of Recipient Hospital. Volunteers who are dispatched to a Recipient Hospital shall provide proof of their professional licensure (e.g. RN, MD) to the Recipient Hospital. Licensed independent practitioner Volunteers shall report to the Recipient Hospital with a copy of their license, hospital privileges and malpractice insurance coverage certificate. If this is not possible because of the nature of the disaster, the Recipient Hospital may verify this information independently and depending on the nature of the emergency such verification may occur after the emergency is determined to be under control. In compliance with JCAHO standards, upon the Recipient Hospital’s emergency management plan activation, the CEO, Medical Staff President, or their designee may grant emergency privileges to licensed independent practitioners with evidence of appropriate identification. Acceptable sources of identification include a current professional license in the State in which the Recipient Hospital is located, a current hospital ID plus license number or verification of the subject practitioner’s identity by a current medical staff member (See JCAHO EC.1.4).

The Recipient Hospital's Incident Commander will identify where and to whom emergency Volunteers are to report and who will direct and/or supervise them. This supervisor will brief the Volunteers of the situation and their assignments. The Recipient Hospital will provide and coordinate any necessary demobilization and post-event stress debriefing. If needed or requested, the Recipient Hospital is responsible for providing the Volunteers with transportation for their return to the Transferring Hospital.

C. TRANSFER OF PHARMACEUTICALS, SUPPLIES OR EQUIPMENT

The Recipient Hospital will utilize the Transferring Hospital's standard order requisition forms as documentation of the receipt of the requested materials. The Recipient Hospital is responsible for tracking the borrowed inventory and returning any non-disposable equipment in good condition or paying for the cost of replacement. The Recipient Hospital will reimburse the Transferring Hospital for any consumable supplies or pharmaceuticals at actual cost incurred by transferring hospital. The Recipient Hospital will pay for all reasonable transportation fees to and from the transfer site. The Recipient Hospital is responsible for appropriate tracking use and necessary maintenance of all borrowed pharmaceuticals, supplies and equipment during the time such items are in the custody of the Recipient Hospital in accordance with law.

VIII. TRANSFER/EVACUATION OF PATIENTS

A. COMMUNICATION AND DOCUMENTATION

In addition to using 911 and community resources, the request for transfer of patients will be made via EMRC or the Montgomery County EOC. The Participating Hospital must specify the number of patients needing to be transferred, the general nature of their illness or condition and any specialized services or placement required. The hospital requesting transfer of one or more of its patients is responsible for providing the receiving hospital with copies of the patient's pertinent medical records, registration information and other information necessary for care, or in the event the patient is transferred from Emergency Department to Emergency Department, a copy of the Collaborative Triage form must transfer with the patient.

B. TRANSPORTING PATIENTS

The hospital requesting transfer of its patients is responsible for triage of patients to be transported. EMRC/EOC is responsible for coordinating the transportation of patients. Extraordinary drugs or special equipment utilized by the patient, if available, will be transported with the patient, if needed, by the hospital that has accepted the patient.

C. SUPERVISION

Once the patient arrives at the accepting Participating Hospital, such hospital and members of its medical staff become responsible for the care of the patient. If requested, the hospital that assumes the care of transferred patients may grant

temporary medical staff privileges or emergency privileges, in accordance with its medical staff bylaws, to the patient's original attending physician.

D. NOTIFICATION

The hospital requesting transfer of a patient is responsible for notifying and if applicable obtaining transfer authorization from the patient or the patient's legal representative, as appropriate, and for notifying the patient's attending physician of the transfer and re-location of patient as soon as practical.

IX. AUXILIARY HOSPITAL AND CASUALTY COLLECTION LOCATIONS

A Participating Hospital may be asked by the Command Hospital to contribute staff to an "auxiliary hospital" or casualty collection location on an urgent basis. These are emergency locations designed to collect, triage or treat casualties during an epidemic or other prolonged mass-casualty emergency situation. If an auxiliary hospital or casualty collection location is required, either the EMRC or the command hospital will coordinate dispatch of volunteers or resources using the same process described above.

X. MEDIA RELATIONS AND RELEASE OF INFORMATION

Each Participating Hospital agrees to participate in a Joint Public Information Center that would be the primary source of information for the media related to a disaster affecting more than one Participating Hospital. Under the direction of the command hospital in consultation with the incident command of the participating hospitals, the Joint Public Information Center would be designated to speak on behalf of the affected Participating Hospitals to assure consistent messages and flow of information. This joint public information center will be established and staffed by the governmental agency with jurisdiction over the incident or event including, but not limited to, local, state, or federal agencies.

XI. MISCELLANEOUS PROVISIONS

- A. TERM AND TERMINATION** – The term of this MOU shall be three (3) years commencing on April 30, 2004. Any Participating Hospital may terminate its participation in this MOU at any time by providing written notice to Montgomery County Hospitals Collaborative Task Force on Weapons of Mass Destruction and all other Participating Hospitals at least thirty days prior to the effective date of such termination.
- B. CONFIDENTIALITY** – Each Participating Hospital shall maintain the confidentiality of all protected health information and medical records in accordance with applicable State and Federal laws, including, but not limited to, the Health Insurance Portability and Accountability Act of 1996 and its associated regulations (HIPAA).

Such confidentiality shall extend to all protected health information provided within the individual Participating Hospitals and confidential data sharing agreements with the Maryland Disease Surveillance System of the Johns Hopkins University/Applied Physics Laboratory (JHU/APL), and the participating

hospitals' agreement with the Montgomery County Department of Health and Human Services.

- C. INSURANCE** – Each Participating Hospital shall maintain, at its own expense, professional, worker's compensation and general liability insurance coverage for itself and its respective employees and, where the Participating Hospital is a Recipient Hospital, agrees to extend its professional and general liability coverage to Volunteers consistent with its existing coverage for other Volunteers for claims arising out of services provided by such Volunteers on behalf of the Recipient Hospital.
- D. DEFENSE AND INDEMNIFICATION** - A Recipient Hospital shall assume the defense and indemnification for liability claims arising from or asserting the negligent acts and omissions of Volunteers who are employed by otherwise covered by the Transferring Hospital. Volunteers who are licensed independent medical practitioners and who are not employees of a Participating Hospital will procure their own professional and general liability coverage and the Recipient Hospital shall not assume any liability, defense or indemnification obligation for such independent Volunteers arising out of participation in this MOU.
- E. HOLD HARMLESS** – The Recipient Hospital will hold harmless the Transferring Hospital for any general or professional liability claims, expenses, and damages including reasonable attorneys' fees or other costs resulting solely from the acts or omissions of Volunteers covered by the Recipient Hospital while such Volunteers are providing services for the Recipient Hospital pursuant to this MOU.
- F. PAYMENT OF FEES** – All compensation for equipment or supplies provided to the Recipient Hospital pursuant to this MOU will be paid by the Recipient Hospital within 30 days of its receipt of an invoice from the Transferring Hospital for such equipment or supplies.
- G. REVIEW AND AMENDMENT** – This MOU shall be reviewed annually or upon written request by a Participating Hospital and may be amended by the written consent of an authorized representative for each of the Participating Hospitals.
- H. NO THIRD PARTY BENEFICIARY** – The provisions of the Agreement are for the benefit of the parties hereto and no third party may seek to enforce, or benefit from these provisions, or seek redress for any breach or other damages alleged or proved under this Agreement.

EXHIBIT A

MONTGOMERY COUNTY HOSPITALS COLLABORATIVE TASK FORCE ON WEAPONS OF MASS DESTRUCTION

LIST OF PARTICIPATING HOSPITALS, GOVERNMENT AGENCIES AND HEALTH SERVICE PROVIDERS:

Holy Cross Hospital

Montgomery General Hospital

Shady Grove Adventist Hospital

Suburban Hospital

Washington Adventist Hospital

Montgomery County Department of Health and Human Services

Montgomery County Fire Rescue Service

Kaiser Permanente

CHIEF EXECUTIVE OFFICER VALIDATION PAGES

The Montgomery County Hospitals:

Kevin J. Sexton, President & CEO, Holy Cross Hospital of Silver Spring, Incorporated

Peter Monge, President & CEO, Montgomery General Hospital

Deborah Yancer, President, Shady Grove Adventist Hospital

Brian Gragnolati, President & CEO, Suburban Hospital

Kenneth Bauer, President, Washington Adventist Hospital

Local Government Services:

Gordon A. Aoyagi, Fire Administrator, Montgomery County Fire and Rescue Service

Ulder J. Tillman, M.D., Health Officer, Montgomery County Department of Health and Human Services

By signing this Memorandum of Understanding, Kaiser Permanente validates its support for the collaborative planning described in this document, indicates Kaiser Permanente's intent to move forward as a participant in the Montgomery County Hospitals Collaborative Task Force, and shows its appreciation for the participants' continued development of shared plans for community-wide management of disasters. Kaiser Permanente is not a hospital, and many of the duties, activities, obligations and entitlements of this MOU do not currently apply to Kaiser Permanente. Kaiser Permanente acknowledges that large-scale disasters will stress local systems beyond conventional capacity, and looks forward to defining explicitly what Kaiser Permanente's role will be in local disaster management.

Marilyn J. Kawamura, Kaiser Foundation Health Plan of the Mid-Atlantic States, Inc.

Philip S. Carney, Jr., MD, Mid-Atlantic Permanente Medical Group, P.C.

MUTUAL AID SYSTEM MEMORANDUM OF UNDERSTANDING KEY POINTS

The document is a voluntary agreement amongst healthcare providers in Baltimore County, Maryland.

It addresses the relationship between and among providers and is intended to augment, not replace existing disaster preparedness plans or rules and procedures governing interactions during a disaster.

The document defines concepts, programs and organizations such as the role of the EMRC (Emergency Medical Resource Center and FRED (Facilities Resources Emergency Database).

The document lays out the commitment each organization will take on as a participating facility – including having a member on the coalition participating in regional emergency exercises, etc.

In the event of a local (to one hospital) or regional disaster, the hospitals will communicate with one another and offer assistance to the hospital in need. This assistance may include supplies, equipment and personnel. It may also include the transfer of patients between facilities in the event of an evacuation.

The patient receiving hospital assumes the legal and financial responsibility for transferred patients upon arrival in the receiving hospital.

Personnel being offered to assist must be fully accredited or credentialed by the hospital providing the staff and must have documentation (ID) to that effect. The receiving facility provides supervision and work shifts for the donated personnel to the same extent that it supervises its own staff.

Hospitals or healthcare facilities receiving equipment, supplies and/or personnel will reimburse the donor facility. In the case of equipment, each healthcare facility agrees to reimburse the donating facility for the loss, damage or destruction of equipment, which occurred while the equipment was in the possession or custody of the borrowing healthcare facility.

The document also states that no party shall assume liability for any injury (including death) to any persons, any damage to any property or other claims arising out of the acts or omissions of any other party or parties or any of such other party's or parties' agents or employees.

The document is for a three-year term, with automatic renewal for additional one-year terms. Each party may terminate their organization's participation at any time, with or without cause with a 30-day notice.

**Baltimore County Healthcare Facilities
Mutual Aid System
Memorandum of Understanding (MOU)**

I. Introduction and Background

As in other parts of the nation, Baltimore County, Maryland is susceptible to disasters, both natural and man-made, that could exceed the resources of any individual hospital. The possibility of an act of terrorism in the Baltimore Metropolitan Area or its immediate vicinity is considerably higher than other places in the United States due to its geographic proximity to important government, military and high profile public institutions. A disaster could result from incidents generating an overwhelming number of patients, a smaller number of patients whose specialized medical requirements exceed the resources of the impacted facility (e.g., hazmat injuries, pulmonary, trauma surgery, etc.), or from incidents such as building or plant problems resulting in the need for partial or complete hospital evacuation.

II. Purpose of Mutual Aid System Memorandum of Understanding

The Mutual Aid support concept is well established and is considered “standard of care” in most emergency response disciplines. The purpose of this Mutual Aid Support agreement is to aid healthcare facilities in their emergency management by authorizing the Healthcare Facilities Mutual Aid System (HFMAS). HFMAS addresses the loan of medical personnel, pharmaceuticals, supplies, and equipment, or assistance with emergent healthcare facility evacuation, including accepting transferred patients.

This Mutual Aid System Memorandum of Understanding (MOU) is a voluntary agreement among the healthcare facilities of Baltimore County, Maryland, for the purpose of providing mutual aid at the time of a medical disaster. For purposes of this MOU, a disaster is defined as an overwhelming incident that exceeds the effective response capability of the impacted health facility or facilities. An incident of this magnitude will almost always involve the Maryland Institute of Emergency Medical Systems Services (MIEMSS), Baltimore County government, specifically the Office of Emergency Management, Fire Department, including HAZMAT and the Health Department. The disaster may be an “external” or “internal” event for healthcare facilities and assumes that each affected healthcare facility’s emergency management plans have been implemented.

This document addresses the relationships between and among Baltimore County healthcare facilities and is intended to augment, not replace, each facility’s disaster plan. The MOU also provides the framework for healthcare facilities to coordinate as a single HFMAS community in actions with the Baltimore County Office of Emergency Management, Baltimore County Health Department, Fire Department HAZMAT, and Emergency Medical Services during planning and response. This document does not replace, but rather supplements the rules and procedures governing interaction with other organizations during a disaster (e.g., law enforcement agencies, the local emergency medical services, Baltimore County Health Department, Fire Department, American Red Cross, etc.).

**Baltimore County Healthcare Facilities
Mutual Aid System
Memorandum of Understanding**

By signing this Memorandum of Understanding (MOU) each Baltimore County healthcare facility is stating its intent to abide by the terms of the MOU in the event of a medical disaster as described above. The terms of this MOU are to be incorporated into the healthcare facility's Emergency Management plans.

III. Definition of Terms

A. Command Post/Center

An area established in a healthcare facility where the facility's primary source of administrative authority and decision-making are relocated during an emergency.

B. Communication Center

The location within a healthcare facility collecting and reporting information to EMRC/FRED.

C. Donor Facility

The healthcare facility that provides personnel, pharmaceuticals, supplies, or equipment to the facility experiencing a medical disaster. Also the facility receiving evacuated patients from another healthcare facility.

D. EMRC

Emergency Medical Resource Center is the communication and information center that has access to the FRED network. The EMRC is operational 24 hours a day. The EMRC does not have any decision-making or supervisory authority.

E. EOC

Emergency Operations Center – the location established by the Baltimore County Office of Emergency Management to centralize coordination of all aspects of a disaster response.

F. Emergency Incident Commander

The person assigned by each healthcare facility to give overall direction for the facility's operations.

G. FRED

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Facilities Resources Emergency Database is the communication system used by hospitals, health departments and state agencies to communicate during an emergency to collect and disseminate information. It is activated according to FRED guidelines.

H. HFMAS

Healthcare Facilities Mutual Aid System

I. Impacted Healthcare Facility

The healthcare facility where the disaster occurred or disaster victims are being treated or the facility from which patients need to be evacuated. The impacted facility is the healthcare facility that has requested personnel or materials from another healthcare facility.

J. Medical Disaster

An incident that exceeds a healthcare facility's effective response capability or cannot appropriately resolve solely by using its own resources. Such disasters will very likely involve the Baltimore County Office of Emergency Management and Baltimore County Health Department and may involve loan of medical and support personnel, pharmaceuticals, supplies, and equipment from another facility, or the emergency evacuation of patients.

K. Partner

The designated facility that a healthcare facility or healthcare system communicates with as a facility's "first call for help" during a medical disaster (developed through an optional partnering arrangement).

L. Participating Healthcare Facility

Healthcare facilities that have fully committed to HFMAS.

M. Baltimore County Emergency Response Coalition

The Baltimore County healthcare facilities who are parties to this memorandum along with representatives from public safety, Baltimore County's Health Department and Emergency Management who meet to plan, train and exercise

**Baltimore County Healthcare Facilities
Mutual Aid System
Memorandum of Understanding**

together in order to best assure a coordinated, timely and effective response to a disaster.

IV. General Principles of Understanding

1. Participating Healthcare Facility

Each healthcare facility designates a representative to attend the Baltimore County Emergency Response Coalition meetings and to coordinate the mutual aid initiatives with the individual hospital's emergency management plans. Hospitals also commit to participating in HFMA exercises and maintaining their radio links to EMRC.

2. Partner Hospital Concept

Each healthcare facility has the option of linking to a designated partner as the healthcare facility of "first call for help" during a disaster. The healthcare facilities agreeing to become partners shall develop, prior to any medical disaster, methods for coordinating communication between themselves, responding to the media, and identifying the locations to enter their partner healthcare facility's security perimeter.

3. Implementation of Mutual aid Memorandum of Understanding

A healthcare facility becomes a participating healthcare facility when an authorized administrator signs the MOU. During a medical emergency, only the Emergency Incident Commander/designee at each hospital has the authority to request or offer assistance through HFMA. Communications between healthcare facilities for formally requesting and volunteering assistance shall be conducted among the Emergency Incident Commanders/designees.

4. Command Post/Center

The Impacted Facility's Command Post/Center is responsible for informing the EMRC of its situation and defining needs that cannot be accommodated by the healthcare facility itself or any existing partner healthcare facility. Each facility's Emergency Incident Commander/designee is responsible for requesting personnel, pharmaceuticals, supplies, equipment, or authorizing the evacuation of patients for their respective facility. The Emergency Incident Commander will coordinate both internally, and with the Donor facility, all of the logistics involved in

**Baltimore County Healthcare Facilities
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implementing assistance under this Memorandum. Logistics include identifying the number and specific location where personnel, pharmaceuticals, supplies, equipment, or patients should be sent, how to enter the security perimeter, estimated time interval to arrival and estimated return date of borrowed supplies equipment and/or personnel, etc.

5. EMRC

Each healthcare facility will participate in an annual HFMA exercise that includes communicating to the EMRC a set of standardized data elements or indicators describing the healthcare facility's resource capacity. The EMRC will serve as an information center for recording and disseminating the type and amount of available resources at each healthcare facility. During a disaster drill or emergency, each healthcare facility will provide information to the EMRC through FRED (see FRED guidelines) the current status of their indicators. Participating institutions that do not have EMRC or FRED (specialty hospital providers and colleges), will be exempted from the requirement to use EMRC or FRED and will be contacted by other means available at the time of the incident.

6. Healthcare Facility Indicators

Each healthcare facility shall track and collect a set of resource measures (e.g., supplies, bed availability) that are reported through FRED during a disaster drill or actual disaster. The indicators are designed to catalogue healthcare facility's resources that could be available for other healthcare facilities during a disaster.

7. Requisition Forms

During a disaster, the impacted healthcare facility will accept and honor the donor healthcare facility's standard requisition forms. Documentation should detail the items involved in the transaction, condition of the material prior to the loan (if applicable), and the party responsible for the material.

8. Authorization

The Impacted Facility will have supervisory direction over the Donor Facility's staff, to the same extent that it supervises its own staff, once such staff report for duty to the Impacted Facility.

**Baltimore County Healthcare Facilities
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Patient-receiving hospitals assume the legal and financial responsibility for transferred patients upon arrival into the patient-receiving hospital.

9. Public Relations

Each healthcare facility is responsible for developing and coordinating with other healthcare facilities and relevant organizations the media response to the disaster. Healthcare facilities are encouraged to develop and coordinate the outline of their response prior to any disaster. The Partner Healthcare Facility should be familiar with each other's mechanisms for addressing the media. This should not preclude a healthcare facility from responding to media requests directed to such facility.

10. Dissemination of Information

Each healthcare facility shall designate a person to disseminate the information regarding this Memorandum to relevant hospital personnel, coordinating and evaluating the healthcare facility's participation in exercises of the mutual aid system, and incorporating the material terms of this Memorandum into the healthcare facility's emergency management plan.

V. General Principles Governing Medical Operations, the Transfer of Pharmaceuticals, Supplies or Equipment or the Evacuation of Patients

1. Partner Healthcare Facility Concept

The Donor Healthcare Facility will inform its Partner Facility of the degree and time frame in which it can meet the request.

2. EMRC

The Recipient or Patient-Transferring Facility is responsible for notifying and information the EMRC through FRED of its personnel or material needs or its need to evacuate patients and the degree to which its Partner Healthcare Facility is unable to meet these needs. Upon the request by the Emergency Incident Commander/designee of the Impacted Facility, the EMRC through FRED will contact the other participating healthcare facilities to determine the availability of additional personnel or material resources, including the availability of beds, as required by the situation. The Recipient Facility will be informed as to which healthcare facilities should be contacted directly for assistance that has been

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offered. The Emergency Incident Commander/designee of the impacted healthcare facility will coordinate directly with the Emergency Incident commander/designee of the Donor or Patient-Receiving Healthcare Facility for this assistance.

3. Initiation of Transfer of Personnel, Material Resources or Patients

Only the Emergency Incident Commander/designee at each healthcare facility has the authority to initiate the transfer or receipt of personnel, material resources, or patients.

Personnel offered by Donor Facilities should be limited to staff that are fully accredited or credentialed in the Donor Facility. No resident physicians, medical/nursing students, or persons in training should be volunteered.

In the event of the evacuation of patients, the Emergency Incident Commander/designee of the Impacted Facility will also notify EMS of its situation and seek assistance, if necessary. Additional assistance may be requested from private ambulance companies.

VI. Specific Principles of Understanding

A. Medical Operations/Loaning Personnel

1. Communication of Request

The request for the transfer of personnel initially can be made verbally. The request, however, must be followed up with written documentation. This should ideally occur prior to the arrival of personnel at the Impacted Facility. The Impacted Facility will identify to the Donor Facility the following:

- a. The type and number of requested personnel.
- b. An estimate of how quickly the request is needed.
- c. The location where they are to report.
- d. An estimate of how long the personnel will be needed.

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2. Arrival of Donated Personnel

The arriving donated personnel will be required to present their Donor Facility identification badge at the site designated by the Impacted Facility's Command Center. The Impacted Facility will be responsible for the following:

- a. Meeting the arriving donated personnel.
- b. Confirming the donated personnel's ID badge with the list of personnel provided by the Donor Facility and assuring it is physically apparent on the individual when working.
- c. Providing additional identification, e.g., "visiting personnel" badge to the arriving donated personnel.

3. Supervision

The Impacted Facility's Emergency Incident Commander/designee shall identify where and to whom the donated personnel are to report. The Impacted Facility shall provide supervision for the donated personnel to the same extent that it supervises its own staff. The supervisor or designee will meet the donated personnel at the point of entry of the facility and brief the donated personnel of the situation and their assignments. The donated personnel's shift, however, should not be longer than the customary length practiced at the Donor Facility.

4. Staff Support

The Impacted Facility shall provide Donor Facility personnel asked to work for extended periods and for multiple shifts with food, housing and/or transportation similar to that provided for the Impacted Facility's regular staff. The costs associated with these forms of support will be borne by the Impacted Facility.

5. Salary Costs

The Impacted Facility will reimburse the Donor Facility for the actual cost of the donated personnel including employment taxes and employee benefits tied to the number of hours worked, provided that the personnel are employees of the Donor Facility, who are being paid at the same rate as if they had worked at the Donor Facility.

**Baltimore County Healthcare Facilities
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The Donor Facility will provide the Impacted Facility with an invoice for salary reimbursement within 90 days of the incident along with all documentation necessary to substantiate the charges. This shall include an itemized list of the employees by name and department along with the actual time and date of the donated work and pay rate. The Impacted facility shall pay a complete, documented invoice within 30 days. Any requests to retroactive adjust of an invoice or payment must occur within 180 days of the incident.

6. Professional Credentialing

Each Healthcare Facility shall establish a mechanism for granting emergency clinical privileges' for physicians, nurses and other licensed healthcare providers to provide services at the Impacted Facility.

7. Demobilization Procedures

The Impacted Facility will provide and coordinate any necessary demobilization procedures and post-event stress debriefing. The Impacted Facility is responsible for providing the donated personnel transportation necessary for their return to the Donor Facility, if necessary.

B. Use of Pharmaceuticals, Supplies or Equipment

1. Communication of Request

The request for the transfer of pharmaceuticals, supplies or equipment initially can be made verbally. The request, however, must be followed-up with a written communication. This should ideally occur prior to the receipt of any material resources at the Impacted Facility. The Impacted Facility will identify to the Donor Facility the following:

- a. The quantity and exact type of requested items.
- b. An estimate of how quickly the request is needed.
- c. Time period for which the supplies, equipment and pharmaceuticals will be needed.
- d. Location to which the supplies, equipment and pharmaceuticals will be needed.

The Donor Facility will identify how long it will take them to fulfill the request. Because response time is critical during a disaster response, each healthcare facility shall use its best efforts to respond to requests for supplies, equipment and/or pharmaceuticals quickly.

2. Documentation

The Impacted Facility will honor the Donor Facility's standard order requisition form as documentation of the request and receipt of the materials. The Impacted Facility will confirm the receipt of the material resources. The documentation will detail the following:

- a. The items involved.
- b. The condition of the equipment prior to the loan (if applicable).
- c. The responsible parties for the borrowed material.

The Donor Facility is responsible for tracking the borrowed inventory through their standard requisition forms. Upon the return of the equipment, supplies and/or pharmaceuticals, the original invoice will be co-signed by the Impacted Facility's designated person, recording the condition of the borrowed equipment.

3. Transporting of Pharmaceuticals, Supplies or Equipment

The Impacted Facility is responsible for coordinating transportation of materials both to and from the Donor Facility. Coordination may involve government and/or private organizations, and the Donor Facility may also offer transport. Transportation will be provided by public or private vehicles as available. Only patients will be transported by ambulance in accordance with current EMS or private ambulance patient transfer protocols. If not enough ambulances are available the Impacted Hospital will need to prioritize the patients based on need and type of transport available. Equipment and supplies can be transported by private car or taxi pickup or available means from government and/or private organizations.

Upon request, the Impacted Facility must return and pay any applicable transportation fees for returning or replacing all borrowed material.

4. Care of Equipment and Supplies

The Impacted Facility is responsible for appropriate safeguarding, use and maintenance of all borrowed pharmaceuticals, supplies or equipment.

5. Costs

**Baltimore County Healthcare Facilities
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a. Cost of Repair/Replacement

Each Healthcare Facility agrees that it shall reimburse a Donor Facility for any loss, damage or destruction of equipment which occurred while such equipment was in the possession or custody of such Healthcare Facility.

b. Cost of Supplies

Each Healthcare Facility shall reimburse or replace to any Donor Facility that provides such Healthcare Facility with supplies or pharmaceuticals. Payment shall be made within ninety (90) days of receipt of an invoice from the Donor Facility.

c. Demobilization Procedures

The Impacted Facility is responsible for the rehabilitation and prompt return of the borrowed equipment to the Donor Facility.

C. Transfer/Evacuation of Patients

1. Transfers

All transfers will follow COBRA regulation i.e. all patients must be stabilized before transfer unless waived by the Federal Government.

2. Communication of Request

The request for the transfer of patients initially can be made verbally. The request, however, must be followed-up with a written communication prior to the actual transferring of any patients. The Impacted Facility will identify to the Donor Facility:

- a. The number of patients needed to be transferred.
- b. The general nature of their illness or condition.
- c. Any type of specialized services required, e.g., ICU bed, burn bed, trauma care, etc.

3. Documentation

**Baltimore County Healthcare Facilities
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The Impacted Facility is responsible for providing the Donor Facility with the patient's complete medical records, insurance information and other patient information necessary for the care of the transferred patient. The Impacted Facility is responsible for tracking the destination of all patients transferred out.

4. Transporting of Patients

The Impacted Facility is responsible for coordinating and financing the transportation of patients to the Donor Facility. The point of entry will be designated by the Donor Facility's Emergency Incident Commander/designee. Once the patient is admitted, that patient becomes the Donor Facility's patient and under care of the Donor Facility's admitting physician until discharged, transferred and reassigned. The Impacted Facility is responsible for the transfer of extraordinary drugs or other special patient needs (e.g., equipment, blood products) along with the patient if requested by the Donor Facility.

5. Notification

The Impacted Facility is responsible for notifying both the patient's family and guardian and the patient's attending or personal physician of the situation. The Donor Facility may assist in notifying the patient's family and personal physician.

D. Partner Hospital Concept (Optional)

Each "Partnered Healthcare Facility" should standardize a set of contacts to facilitate communications during a disaster in conjunction with the Baltimore County Office of Emergency Management.

The procedural steps in the event of a disaster are as follows:

1. Determine the total number of patients the emergency department and Healthcare facility can accept, and if possible, the total number of patients with major and minor injuries.
2. Impacted Healthcare Facility contacts partner Healthcare Facility to determine availability of beds, equipment, supplies and personnel.

**Baltimore County Healthcare Facilities
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(Contacts secondary partner healthcare facility if primary healthcare facility is unable to meet needs.)

3. At the request of the Impacted Healthcare Facility, the EMRC through FRED will contact other healthcare facilities to alert them to the situation and to begin an inventory for any possible or actual unmet needs.

VII. Miscellaneous Provisions

A. Term

The term of this Memorandum shall be three (3) years, unless sooner terminated as provided herein. This Memorandum will automatically be renewed for successive terms of one year, unless terminated sooner as provided herein.

B. Termination

1. This Memorandum may be terminated upon written agreement of the Parties hereto.
2. Each party to this Memorandum may terminate its participation hereunder, with or without cause, by providing written notice to the other parties at least thirty (30) days prior to the effective date of such termination.

C. Confidentiality

Each Healthcare Facility shall maintain the confidentiality of all patient health information and medical records in accordance with applicable state and federal laws and regulations.

D. Insurance

Each Healthcare Facility shall maintain, at its own expense, professional liability coverage for itself and its respective employees and authorized agents with: (a) a per claim limit of not less than the then current cap on damages in a medical malpractice suit, set forth in Maryland Code, and (b) an annual aggregate limit equal to three (3) times the amount of the required per claim limit set forth in item (a) above.

**Baltimore County Healthcare Facilities
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E. Liability

No party shall assume any liability for any injury (including death) to any persons, any damage to any property or other claim arising out of the acts or omissions of any other party or parties or any such other party's or parties' agents or employees.

F. Independent Contractors

All parties, in the performance of their respective obligations under this Agreement, shall be acting in its own individual capacity and not as an agent, employee, partner, joint venture or associate of the other parties. The employees and agents of one party shall not be deemed or construed to be the employees, agents or partners of the other parties for any purpose whatsoever. The parties expressly understand and agree that each party is an independent contractor of the other parties and that no party to this Agreement is authorized to bind the any other party to any liability or obligation or to represent that it has any such authority.

G. Counterparts

This Agreement may be executed in two or more counterparts, all of which shall, in the aggregate, be considered one and the same instrument.

H. Cooperation Regarding Claims and Litigation

The parties agree that to the extent permitted by their respective professional liability insurance programs, they shall provide each other with full cooperation in assisting each other, their duly authorized officers, employees, agents, representatives and attorneys, in investigating, defending or prosecuting incidents involving circumstances which occurred during the term of this Agreement and which relate to the duties and obligations described herein, including those which were not raised until after termination of this Agreement.

I. Release

Each party agrees that it shall waive its right to pursue any claim or legal action against another party arising out of or relating to such other party's provision of staff, equipment, medications or supplies pursuant to this Memorandum, unless such other party has:

**Baltimore County Healthcare Facilities
Mutual Aid System
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- a. Failed to use reasonable care in credentialing personnel provided under this Memorandum.
- b. Failed to use reasonable care in maintaining all equipment and supplies furnished hereunder; or
- c. Has acted with malice or engaged in an intentional wrongful act.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date and year written below:

**John K. Tolmie, President and CEO
St. Joseph Medical Center**

DATE

**Carl J. Schindelar, President
Franklin Square Hospital Center**

DATE

**Steven S. Sharfstein, MD, President and CEO
Sheppard and Enoch Pratt Hospital**

DATE

**Laurence M. Merlis, President and CEO
Greater Baltimore Medical Center**

DATE

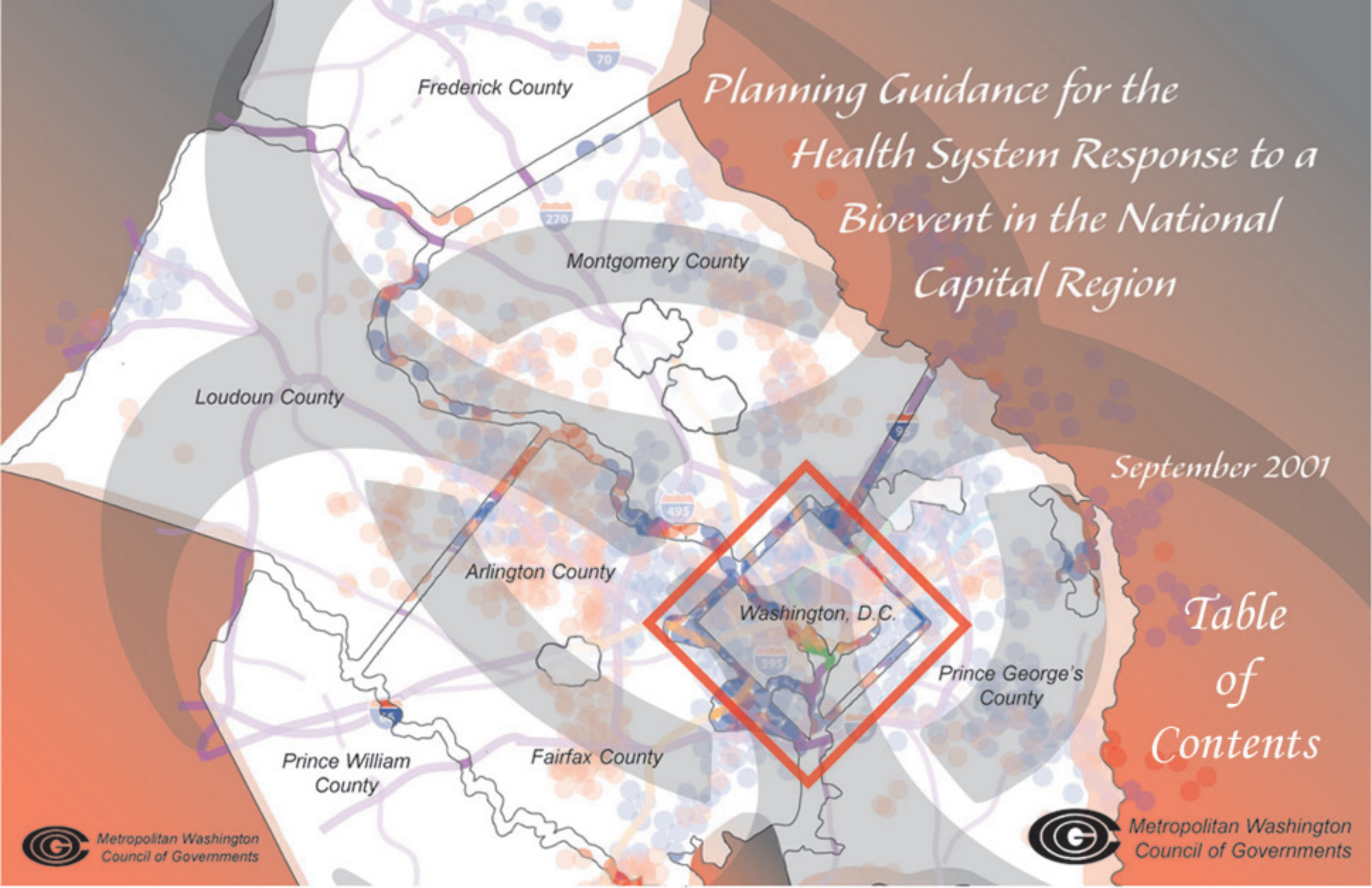
**Eric Wexler, President and COO
Northwest Hospital Center**

DATE

APPENDIX M

Planning Guidance for the Health System Response to a Bioevent in the National Capital Region

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A map of the National Capital Region, including Frederick County, Montgomery County, Loudoun County, Arlington County, Prince William County, Fairfax County, and Prince George's County, with Washington, D.C. highlighted by a red diamond. Major highways like I-70, I-270, I-495, and I-395 are shown. The map is overlaid with a grid of colored dots in shades of blue, orange, and purple, representing a data distribution or health system response. The background is a mix of light and dark brown tones.

*Planning Guidance for the
Health System Response to a
Bioevent in the National
Capital Region*

September 2001

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of
Contents*

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Listing of Contributors

Bio-Terrorism Medical Response Steering Committee Membership:

Chairman: Robert Malson - District of Columbia Hospital Association

Vice Chairman: Jared Florance, MD - Prince William Health District

Members:

Sherry Adams - District of Columbia Department of Health

Jonathan Arden, MD - District of Columbia Office of the Chief Medical Examiner

Julie Casani, MD - Maryland Department of Health & Mental Hygiene

Jacob Casper, MD - Maryland Department of Agriculture

Mae Cundiff - Association of Professionals in Infection Control

Librada Estrada - Prince William Health District

Frances Field, MD - Northern Virginia Medical Examiners Office

Philip A. Forbes - Veterans Health Administration, Washington, DC

Lynn Frank - Montgomery County Public Health Service

Captain Elliott Grollman - Federal Protective Service

Colonel Molly Hall - DOD Uniformed Services University of Health Science

Kathleen Henning - Montgomery County Office of Emergency Management

Fire Marshal/Deputy Chief Ted Jarboe - Montgomery County Fire & Rescue Service

Bill Kelly - Montgomery County Public Health Service

Mercedes Lawrence - Prince George County Health Department

Don Lumpkins - Maryland Emergency Management Agency

Chief Barry McDevitt - Metro Transit Police/COG Police Chiefs Committee

John McGuire - Funeral Directors Association of Washington

Robert Pittman - Mayor's EMS Advisory Committee

Chief Edward Plaughter - Arlington County Fire Department/COG Fire Chiefs Committee

Denise Sockwell - Virginia Department of Health

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Michael Stoto, PhD - George Washington Univ. School of Public Health & Hlth. Services

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Phil Perking and Myra Socher
31 August 2001

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EXECUTIVE SUMMARY

Background. A major principle of emergency preparedness requires the leadership of all levels of government under vested authority to plan for the efficient coordination and management of the resources necessary to reduce the consequences of a public safety emergency on the local jurisdiction's residents and visitors. There is considerable potential for a bioevent to have a regional impact (see Introduction, page iv). Therefore, with the support of state, federal, and cooperative private organizations, local governments should be capable of those actions that will reduce public vulnerability and promote an efficient response to the incident through efficient coordination of resources across jurisdictional lines. For the purposes of this document, the term bioevent refers to a bioterrorist incident or a large-scale naturally occurring event such as pandemic influenza. This planning guidance for a bioevent was developed through the cooperative effort of many individuals representing key government and private elements within the national capital region (NCR) that would most likely be involved should such an event occur. This guidance is offered as a consensus approach to a challenging issue in order to promote inter- and intra-jurisdictional coordination while preserving the unique characteristics and operating procedures of each member jurisdiction.

The Metropolitan Washington Council of Governments (COG) contracted with the United States Public Health Service's Office of Emergency Preparedness to design a plan for a health system response to a bioterrorist attack in the NCR. The COG then contracted with the Battelle Team to perform the task. The scope of the task was expanded to include a response to pandemic influenza. The composition of the Battelle Team is reflected on the cover page. At the request of the COG community representatives, the term 'planning guidance' was substituted for 'plan'. Three overarching concepts are embodied in the planning guidance: operational issues – which are the purview of the local or state authorities, technical issues, and policy issues. The backgrounds of the COG, the NCR, and the various committees involved in the planning effort are discussed.

Goal and Objectives. The Metropolitan Washington Council of Governments, by reason of its planning process, will work to improve the capability of the jurisdictions within the national capital region to cooperatively manage the health consequences associated with a bioevent. This planning guidance is designed to facilitate the coordination of the medical actions that local, state, and federal government agencies and medical providers in the national capital region would take in responding to a bioevent. This guidance is intended to optimize the use of existing authorities, organizations, resources, systems, and programs in the national capital region and integrate these assets into a cohesive response capability. The goal of this effort is to strengthen the health care response systems, allowing them to meet the following objectives:

- Improve early recognition
- Provide prevention strategies including mass immunization/prophylaxis¹

¹ The original USPHS/OEP objectives were to 'provide mass immunization/prophylaxis'. The COG BTF members chose to revise this objective to 'provide prevention strategies including mass immunization/prophylaxis'.

- Provide mass care
- Provide respectful and safe disposition of the dead
- Provide for environmental surety

Organization. The document is divided into an introduction and five main sections:

- Response Outline
- Annexes
- Planning Considerations
- References
- Local Plans

Response Outline. The first section outlines the recommended response to a bioevent. Follow-on sections are organized around these recommendations, and consist of a list of actions designed for consideration by the member jurisdictions during the planning process.

Annexes. Each Annex is divided into three sub-sections:

- A description of the function covered.
- Point A, which provides information on current capability and applicable resources in the national capital region.
- Point B, which describes an enhanced response capability together with steps that may be taken to improve the existing response system and bring it to a higher level of preparedness.

The presence of a 'Point A or Point B' in the Annexes was a function of information availability and BTF guidance. Not all Annexes will contain both Point A and Point B and some Annexes will contain neither. However, the framework is provided for future expansion of the document.

Planning Considerations. This section provides lists of planning steps in checklist format for the individual jurisdictions to consider when further developing their own response plans. It is divided into various sub-sections: Incident Management/Logistics, Medical and Public Health Surveillance, Prevention Strategies including Mass Immunization and Prophylaxis, Mass Patient Care, Mass Fatality Management, and Environmental Surety. Obviously, planning must occur well in advance of a bioevent in order to operate successfully during an incident.

References. This section provides medical and scientific information pertaining to key biological agents, a reference section, a glossary of terms, and acknowledgements.

Local Plans. This section contains a list of local plans that were referenced in the development of the planning guidelines. A comparison chart is included, identifying the similarities and differences among the current response plans of the District of Columbia, State of Maryland, and Commonwealth of Virginia. Full text files of the plans were included in the compact disk version of this report.

This planning guidance is intended to be a living document. It is the effort of a multi-disciplinary, multi-agency steering committee - the Bioterrorism Task Force (BTF) - which will continue to meet on a regular basis to ensure that new technologies and innovations in the areas of bioterrorism preparedness and communicable disease control are considered and incorporated into this document. Plans developed from these guidelines must be regularly reviewed, exercised and revised in order to remain effective.

INTRODUCTION

The Metropolitan Washington Council of Governments (COG) is a regional organization of National Capital area local governments. It is comprised of seventeen local governments that surround our nation's capital, plus area members of the Maryland and Virginia legislatures, the U.S. Senate, and the U.S. House of Representatives.

COG was founded on April 11, 1957. According to the 2000 census figures, COG's membership covered a population base of 4,211,964 and 3,020 square miles. COG is an independent, nonprofit association supported by financial contributions from its participating local governments, federal and state grants and contracts, and donations from foundations and the private sector.

By supporting local, state, and federal planning, COG provides a forum for consensus building and policy-making while supporting the region as an expert information and major review resource. By virtue of its mission to enhance the quality of life in the metropolitan Washington area, COG has spearheaded the planning process necessary to create a health system response to a bioevent in the national capital region to coordinate and integrate existing resources.

The COG's mission is to serve as a high performance regional organization that applies best practices and cutting-edge technologies to regional issues. This makes the COG ideally suited to assist communities in planning for the integration and development of new and more advanced systems to effectively respond to acts of terrorism or naturally occurring diseases that threaten the health of citizens in the national capitol region.

The planning process has included identifying health resources in the community, understanding the governmental environment in the national capital region, and communicating the local agencies' capabilities, roles, and responsibilities. Through the efforts of the steering committee, the planning process facilitated the development of collaborative networks between the public health and emergency response communities, and the different support organizations at the state and national levels. Experience with naturally occurring bioevents has demonstrated the need for coordinated multi-jurisdictional response.

By addressing the challenges that a bioevent may present, the planning effort can strengthen the ability of public health agencies to perform routine tasks that affect daily medical care and public health activities. These efforts are essential in developing a more robust public health infrastructure and providing necessary resources to manage a dramatic increase in requirements: providing surveillance, engaging in epidemiological investigations, distributing medical and public health recommendations, distributing scarce resources, and communicating with hospitals, the public, and other local, state, and federal agencies. Investing in our public health system provides the best civil defense against bioevents.

The multi-disciplinary, multi-agency COG Bio-Defense Steering Committee (now the Bioterrorism Task Force) that was assembled to provide input and review for this purpose has representation from various subcommittees:

Health Officers Committee

This committee is comprised of health officers from the region's public health departments. The health officers typically are directors of the local jurisdictions' public health departments. They are responsible for maintaining the public health of their communities through the maintenance of services and programs in such areas as communicable disease control, food inspection, maternal and child health, school health, and environmental health concerns. This committee provides a forum for the exchange of information, ideas, and problems of mutual interest to the region and fosters a network for the transfer of innovative programs and ideas. It monitors public health trends from a regional perspective, mobilizes inter-jurisdictional approaches to address specific public health problems, and serves as the regional public health expert, providing recommendations to the region's elected officials. This body was responsible for creating the regional West Nile Virus Plan in CY 2000.

The Human Services & Public Safety Policy Committee

This committee assists the COG Board of Directors in addressing public safety problems at the regional level. Major activities include development of public safety recommendations, review of recommendations from the technical committees (Fire Chiefs, Police Chiefs, and Disaster and Emergency Preparedness), and review of public safety projects, proposals, and ideas that are regional in nature.

Fire Chiefs Committee

Fire/rescue planning is a function of this body, which comprises the top officials of the COG member jurisdictions' fire/rescue services. They provide technical analyses and policy recommendations on regional fire/rescue issues to the COG Human Services & Public Safety Policy Committee.

Police Chiefs Committee

Law enforcement planning coordination is accomplished through this body. It is comprised of the top police officials of the COG member jurisdictions. They provide technical analyses and policy recommendations on regional law enforcement issues to the COG Human Services & Public Safety Policy Committee.

Disaster and Emergency Preparedness Committee

This committee is comprised of the emergency services directors/coordinators of COG local governments and representatives from the State of Maryland and the Commonwealth of Virginia. The Disaster and Emergency Preparedness Committee is primarily concerned with emergency preparedness and planning and has developed plans and procedures for coping with many different types of disasters and emergencies on a regional basis.

Representatives of these committees attend the monthly meetings of the Bioterrorism Task Force. Additionally, the authors of this planning guidance briefed the various COG committees on a regular basis and solicited their input as the document evolved. The COG Chief Administrative Officers maintained full visibility of the project by being briefed on the project's progress.

The strength of the COG bioevent planning process is the opportunity for individuals from different agencies to interact in a planning forum that enables the coordination of efforts and responses before an event occurs.

SECTION I, RESPONSE OUTLINE

A. Detect Event

Event detection is dependent upon (a) state and local public health surveillance, and/or (b) notification from the public safety community (see Annex: Passive Surveillance). Regional coordination and sharing information among jurisdictions may be necessary for determining if an actual event has occurred based on information from individual or multiple incidents.

1. Unannounced. Detection of an unannounced event may be determined through several pathways such as:
 - An irregularity in one or more key local indicators during passive medical and public health surveillance.
 - A report of an unusual disease or occurrence.
 - A suspicious increase in the number of people reporting common illnesses, syndromes and symptoms.
 - A report through the mandatory disease reporting systems.
 - Other sentinel surveillance systems such as EMS, or veterinarians.
 - An event may be detected at the local health care provider level, the local health department, the state public health departments, and/or the Centers for Disease Control and Prevention (CDC). The NCR planning guide recommends that each member jurisdiction's public health department notify the public health departments of the other members when reporting key local indicators. To facilitate this, the COG Health Officers Committee currently maintains an updated point of contact (POC) list for all area health officers.
2. Announced. For an announced event to trigger a response it must be judged "credible" by the appropriate local, state, or federal agencies.

Medical surveillance should operate continuously and provide non-specific detection of medical activities above established baselines in order to improve the chances of detecting unusual medical events sooner rather than later. Traditional surveillance systems rely on diagnosis-based reporting. In order to initiate an early rapid response, it may be necessary to include other types of surveillance methods: i.e. syndromic surveillance. Specific activities, i.e., volume of 911 calls, categorized EMS runs, or unusual deaths, as well as other "non-traditional" events may be sensitive indicators early on in a bioevent. Once the monitored values pass a trigger threshold, this activity must be reported to an individual within the jurisdiction's public health department or equivalent agency for action. In order to more rapidly detect an event with potential regional consequences, an enhanced system of surveillance across the region should be a goal.

B. Assess Event

Upon notification of a likely event, the public health departments in the affected areas should commence analyzing data in conjunction with other local and state health departments (see Annex: Active Surveillance) to accomplish the following tasks:

- Verify that the report is valid.
- Determine if the event is, in fact, suspicious.
- Assist in determining subsequent courses of action (see Annex: Diagnosis).

Upon detection of an event, and at the request of the appropriate officials, the COG will be available to assist with such functions as:

- Coordinating communications: videoconferences and teleconferences.
- Assisting with the access to subject matter expertise.
- Providing support staff.

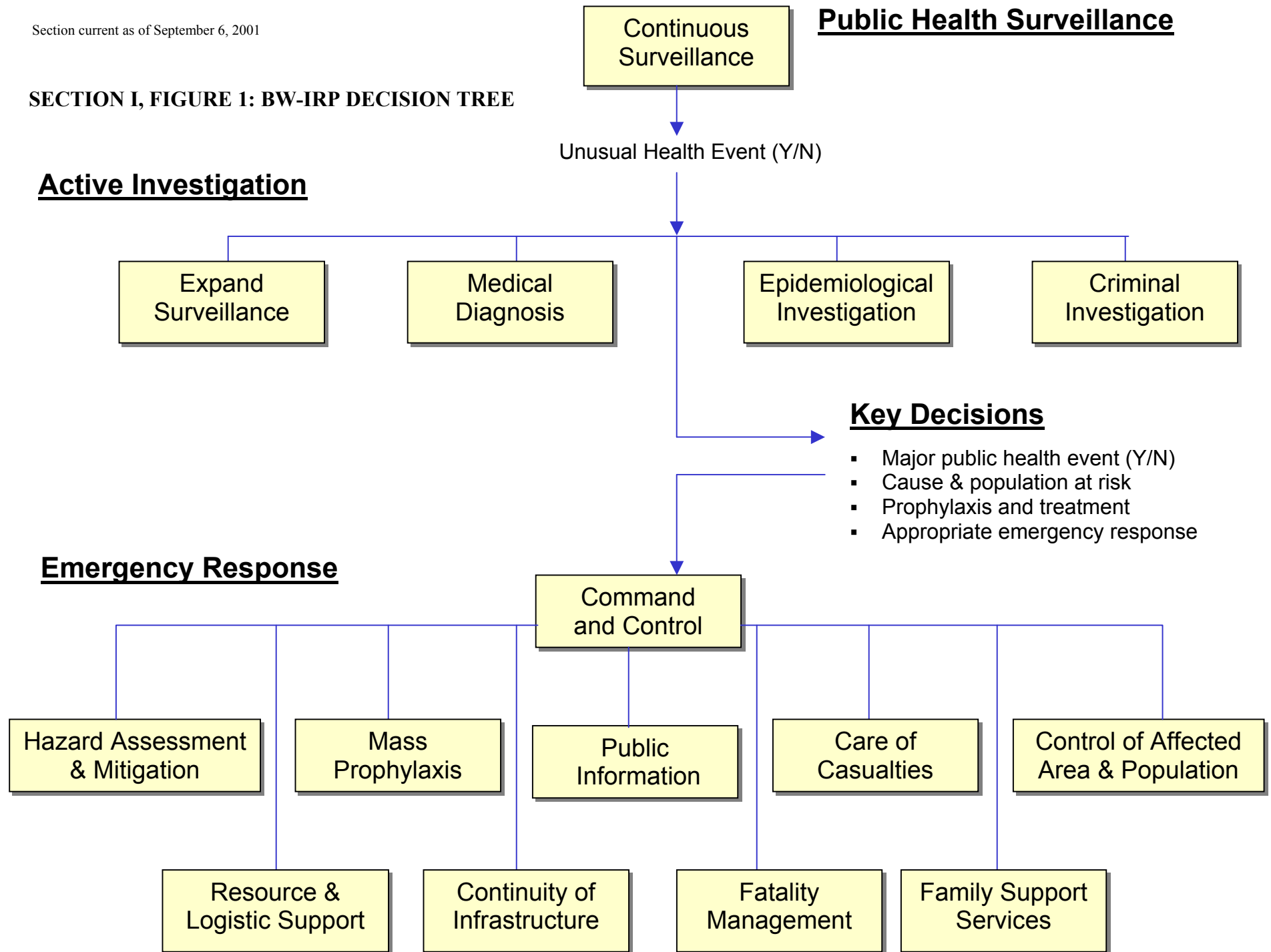
C. Determine the Course of Action

1. After the event has been assessed, recommendations for a course of action can be made. These recommendations are then conveyed to the jurisdictions of the national capital region.
2. Decision Tree². The following response template and decision trees (Figures 1–5) were published in August 1999 and updated in November 2000 by the Biological Weapons Improved Response Program (BW-IRP), U.S. Army Soldier and Biological Chemical Command (SBCCOM). This material is used by permission from SBCCOM. The underlying assumption for the decision tree is that the local jurisdiction maintains a functional medical surveillance program. In order to implement a regional response, a system for sharing surveillance data across the region is necessary.

² Editorial Comment: Full text of the 1999 Decision Tree Report is available on the SBCCOM website, www2.sbccom.army.mil/hld/, under 'Products and Services'. The updated version of the report is in the review process, and will be published on the SBCCOM website once it has been approved for public release.

Public Health Surveillance

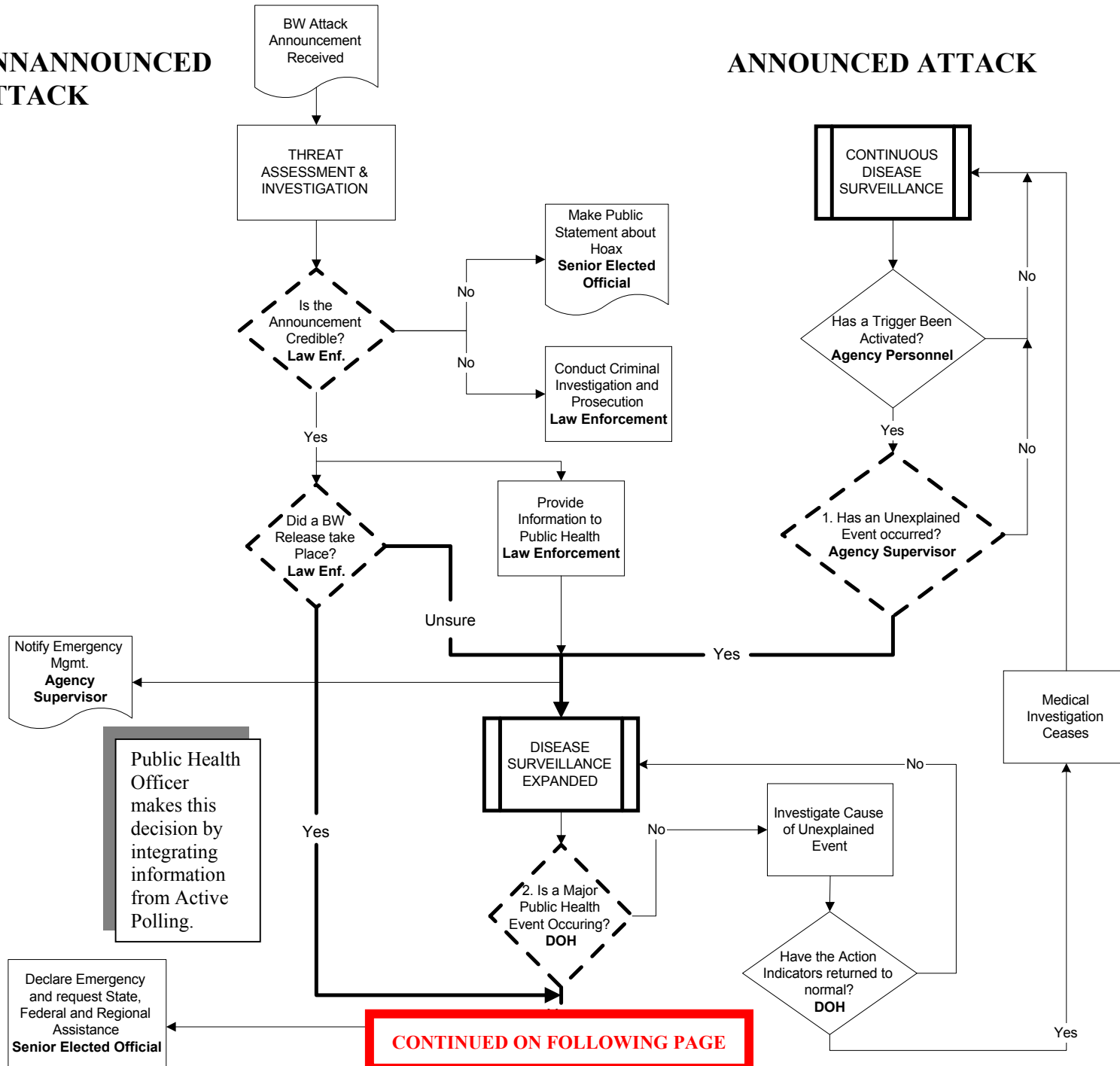
SECTION I, FIGURE 1: BW-IRP DECISION TREE



SECTION I, FIGURE 2: BW RESPONSE DECISION TREE

UNANNOUNCED ATTACK

ANNOUNCED ATTACK



CONTINUED ON FOLLOWING PAGE

Assume a continuous Medical Surveillance program is operating and providing real-time information to appropriate Personnel.

Examples of Monitored Data:

- 911 Calls
- Categorized EMS Runs
- Number of Deaths, particularly Unusual Deaths

Quick Intradepartmental investigation to see if there is a known cause for the Unusual Activity, i.e., major transportation accident or natural disaster.

Begin Active Polling by Public Health Office of Hospital Emergency Rooms, Poison Control Centers, Morgues, and other local Health Offices, Police, and Fire.

Consider Activation of the Emergency Operations Center (EOC).

Public Health Officer makes this decision by integrating information from Active Polling.

Notify Emergency Mgmt. Agency Supervisor

Declare Emergency and request State, Federal and Regional Assistance Senior Elected Official

Medical Investigation Ceases

Investigate Cause of Unexplained Event

Have the Action Indicators returned to normal? DOH

CONTINUOUS DISEASE SURVEILLANCE

Has a Trigger Been Activated? Agency Personnel

1. Has an Unexplained Event occurred? Agency Supervisor

DISEASE SURVEILLANCE EXPANDED

2. Is a Major Public Health Event Occurring? DOH

THREAT ASSESSMENT & INVESTIGATION

BW Attack Announcement Received

Make Public Statement about Hoax Senior Elected Official

Conduct Criminal Investigation and Prosecution Law Enforcement

Provide Information to Public Health Law Enforcement

Yes

No

No

No

No

No

No

Yes

Yes

Unsure

Yes

Yes

Medical Investigation Ceases

Have the Action Indicators returned to normal? DOH

Investigate Cause of Unexplained Event

2. Is a Major Public Health Event Occurring? DOH

DISEASE SURVEILLANCE EXPANDED

1. Has an Unexplained Event occurred? Agency Supervisor

CONTINUOUS DISEASE SURVEILLANCE

ANNOUNCED ATTACK

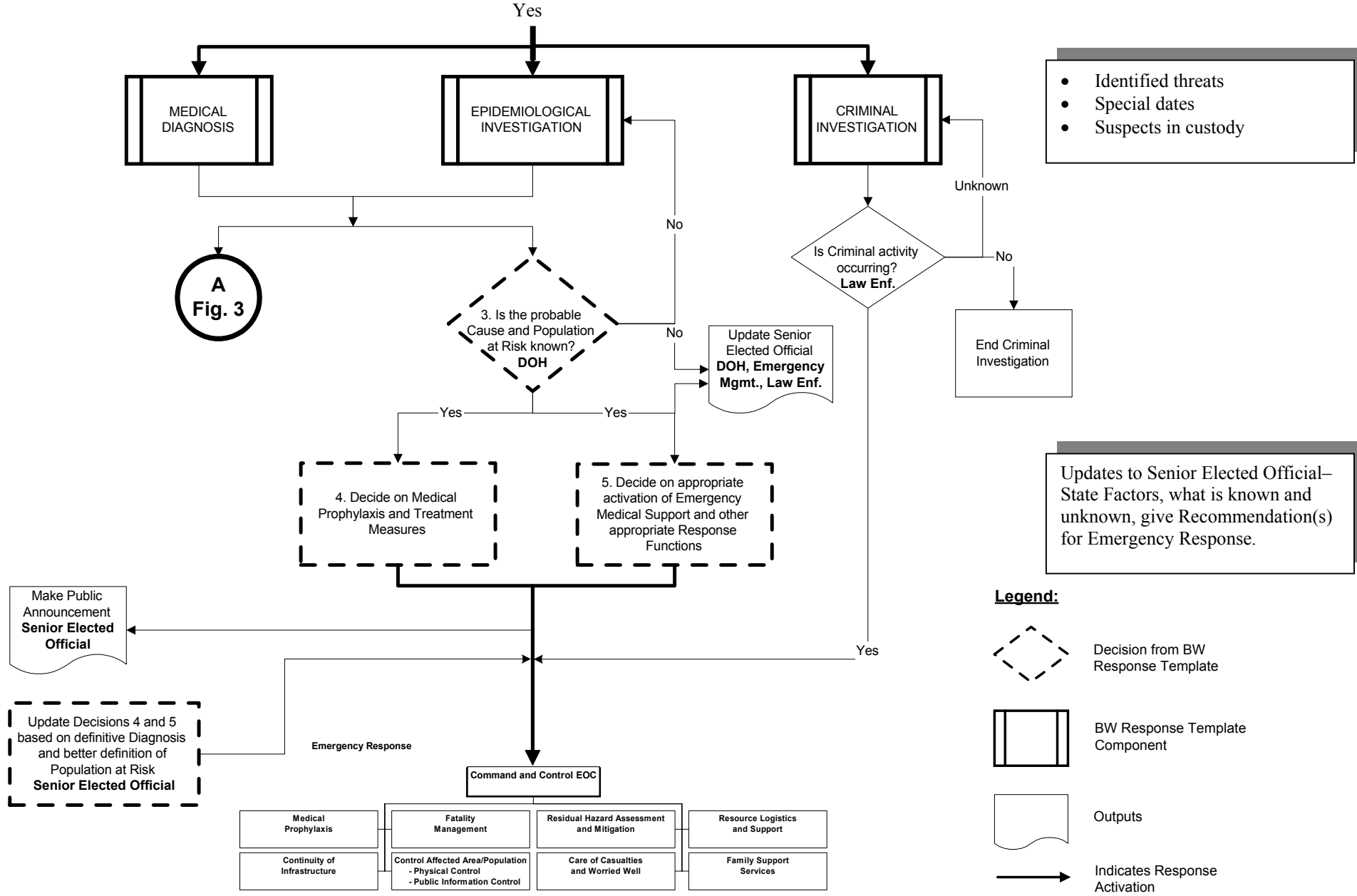
UNANNOUNCED ATTACK

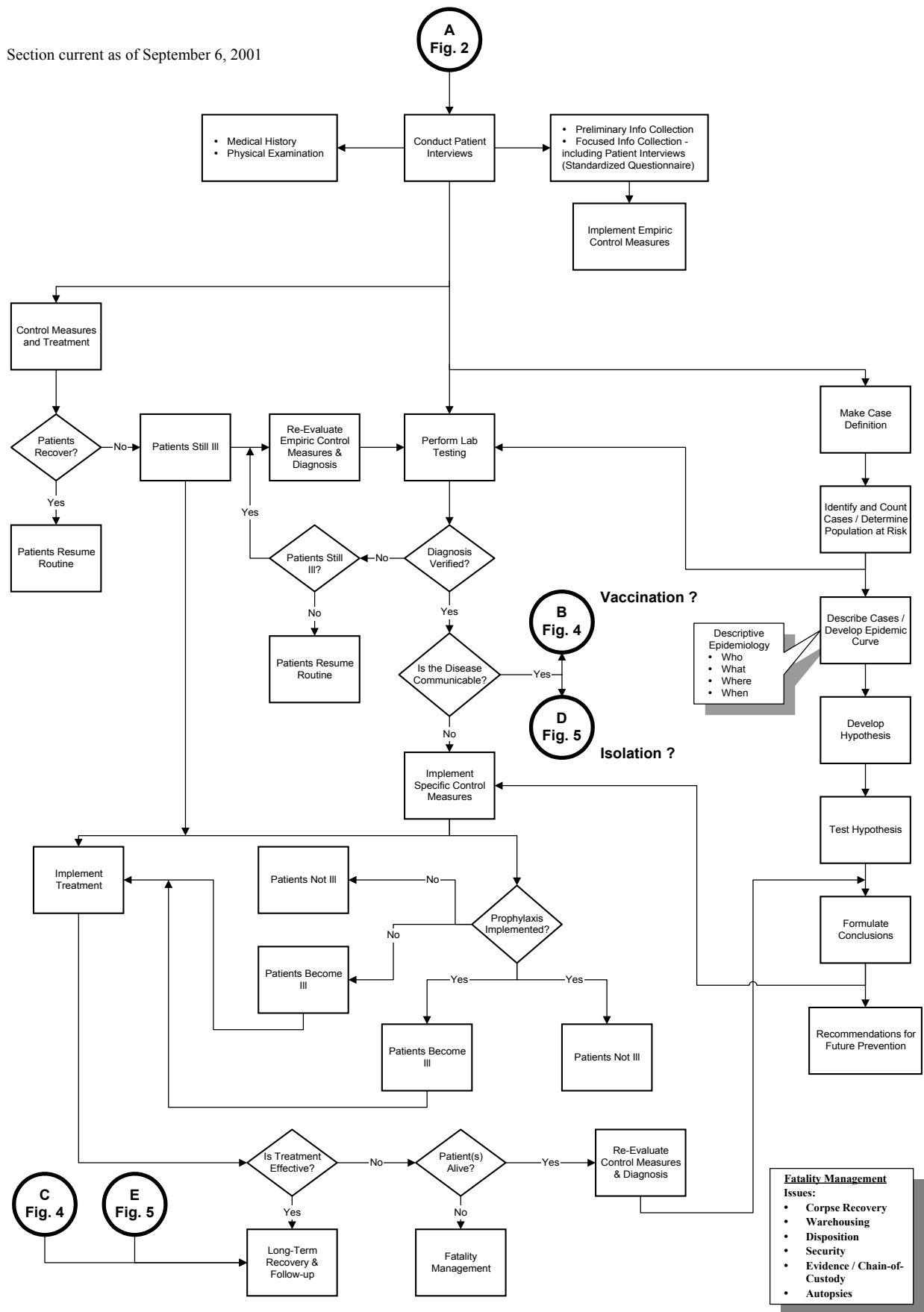
SECTION I, FIGURE 2: BW RESPONSE DECISION TREE



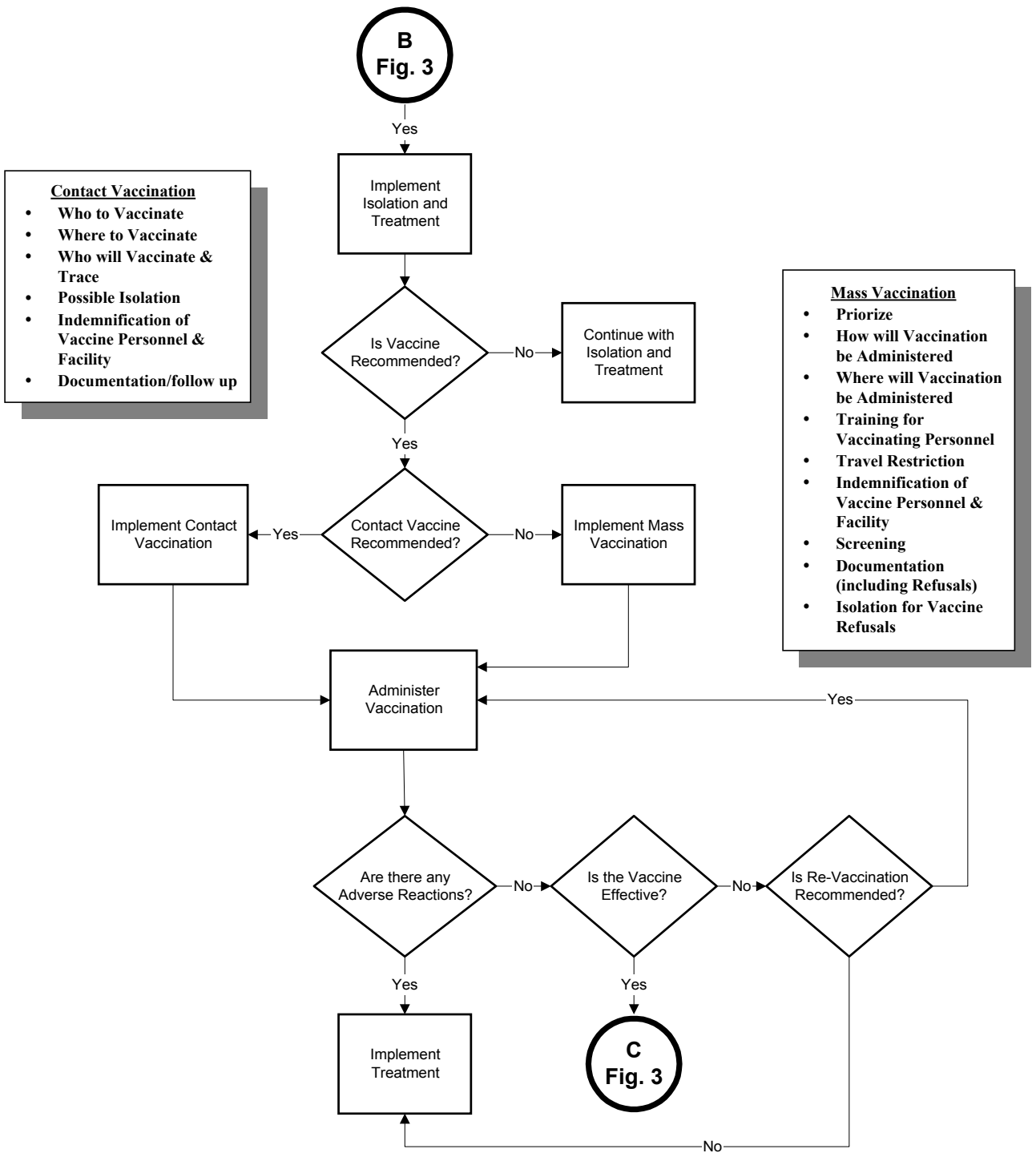
- Identified threats
- Special dates
- Suspects in custody

Updates to Senior Elected Official—State Factors, what is known and unknown, give Recommendation(s) for Emergency Response.

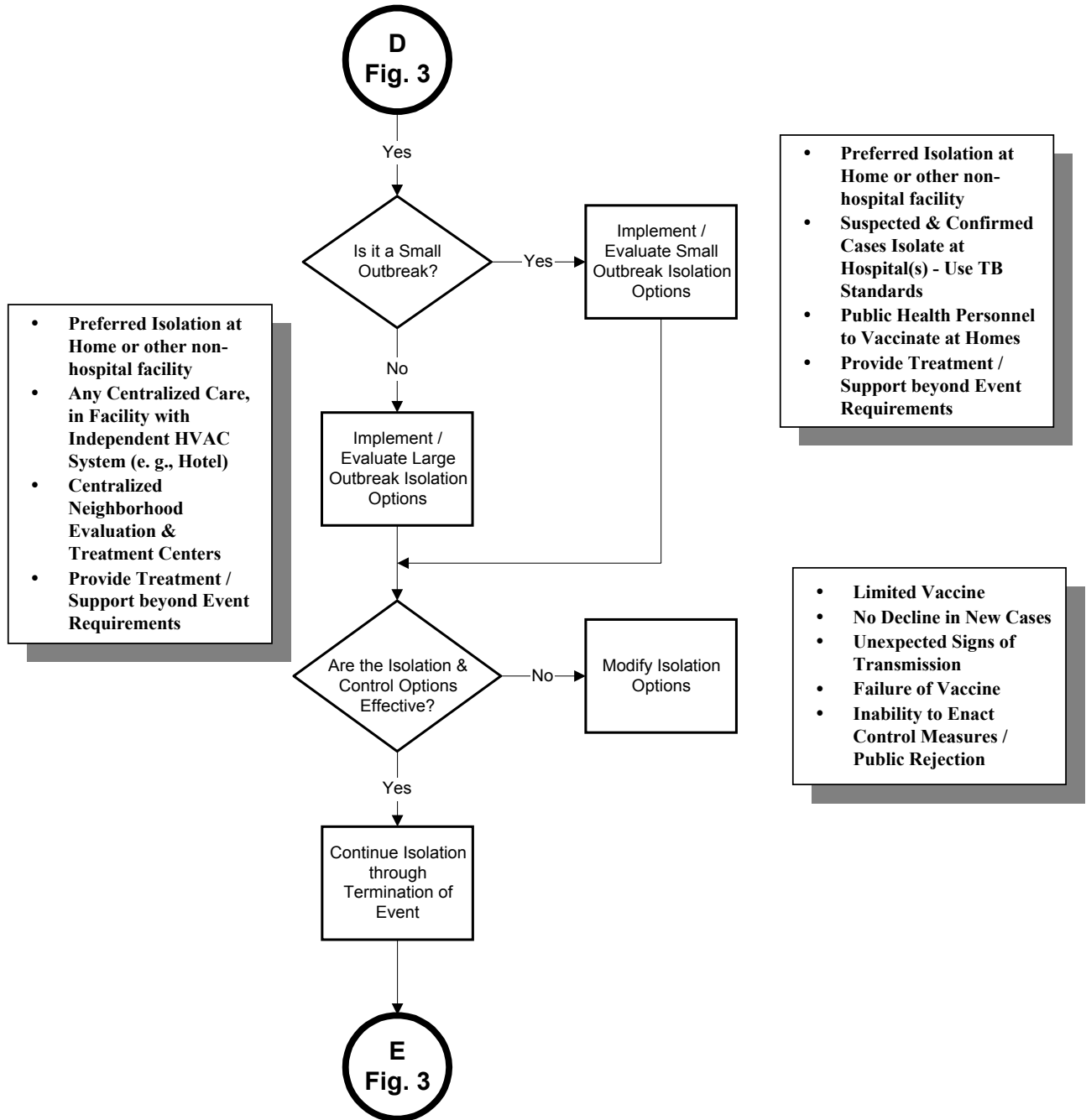




SECTION I, FIGURE 3: MEDICAL/PUBLIC HEALTH DECISION TREE –EPIDEMIOLOGICAL INVESTIGATION



SECTION I, FIGURE 4: VACCINATION DECISION TREE



SECTION I, FIGURE 5: ISOLATION DECISION TREE

D. Respond to Emergency

1. Prevention Strategies:

- **Prophylaxis and Immunization.** It is imperative that the jurisdictions develop plans for mass prophylaxis/immunization procedures (see Annex: Medical Prophylaxis).
 - a. Based on technical recommendations, local hospitals, neighborhood health clinics, and urgent care centers (either freestanding or hospital-based) should execute their in-house strategies once the decision to initiate mass prophylaxis is made.
 - b. Pharmaceuticals should initially be distributed through existing medical institutions. In under-served or heavily populated areas, alternative methods to distribute medications may have to be used.
- **Control of Communicable Diseases.** Based on the transmission characteristics of the disease agent involved, planning may require provisions to limit public events and activities, or to minimize exposure through restrictions on travel or imposing restrictions at transportation hubs. Such changes will require interjurisdictional cooperative agreements and may require specific legislation.

2. Mass Patient Care. It is recommended that mass patient care operations be initiated as necessary (see Annex: Mass Patient Care).

- Individual jurisdictions, at the direction of their emergency operations centers, should put into effect their existing plans to deal with mass casualties. As the number of patients rises and begins to overwhelm the ability of the local medical institutions to deliver care, the local Emergency Management Agency (EMA), in concert with the local health department, should implement applicable phases of the Medical Response Expansion Program (MREP) (see Annex: Medical Response Expansion Program). This may include Alternative Medical Centers (AMCs), in addition to Outpatient Treatment Centers (OPTCs). Planning must include resources such as physical plant, personnel, equipment, etc. Cooperative agreements with outreach health care facilities should be established prior to any event. Personnel issues such as availability, training, credentialing, etc. must be planned for and appropriate regulations promulgated if necessary. Jurisdictional boundary issues will require cooperative agreements between member jurisdictions of COG.
- EMS resources should be mobilized in compliance with the EMS portion of the plan. EMS resources may consist of cross-trained personnel for utilization in the accessory health treatment facilities, transporting patients, etc. (see Annex: Resourcing EMS Capabilities).
- The hospital response plan should be implemented. Planning includes agreements to make every attempt to discharge stable patients and transfer suitable non-*bioevent* patients to other comparable outlying facilities in order to make bed space available for critically ill victims (see Annex: Hospital Plan).

- The Health and Medical EOC should serve as the medical command and control element (see Annex: ESF-8 Operations Plan).
 - The existing Hospital Mutual Aid Radio System (HMARS), the Capital Wireless Integrated Network (CAPWIN), and the Washington Area Warning System (WAWS) of the National Alert Warning System, together with other communications resources in the District of Columbia, Maryland and Virginia, should assist with coordinating communications between the various agencies as appropriate. Additional resources that can be called upon are Radio Emergency Associate Communications Teams (REACT) and the Radio Amateur Civil Emergency Services (RACES). Their personnel may be positioned at each hospital, OPTC, and AMC to help facilitate communications among and between hospitals, OPTCs, AMCs, and the EOC by telephone, fax, and email whenever possible.
3. Mass Fatality Management. It is recommended that the individual jurisdictions initiate their mass fatality management plans as necessary (see Annex: Mass Fatality Management Implementation).
 4. Environmental Surety. Technical advisors, in conjunction with the appropriate state agencies, should issue guidance for the specific steps required for re-entry (see Annex: Agent Surety). It is recommended that the jurisdictions initiate the following environmental surety operations as necessary:
 - Perform environmental sampling to determine the extent and level of contamination.
 - Examine any animals found in the area of the incident for disease.
 - Identify, log, and dispose of all dead animal carcasses.
 - Establish measures to control vectors.
 - Limit access to, or decontaminate heavily contaminated areas as appropriate.
 - Identify and assess buildings used to house or treat infected persons.
 - Initiate a public information program to inform residents of the presence of any residual dangers and protective measures, as dictated by the incident.

E. Conduct Public Notifications

All jurisdictions should coordinate media inquiries through a regional Joint Information Center (JIC) so that the communications reflect a unified governmental leadership. Planning should have identified and formalized relationships between the different information centers that should be in place at the local, state, and federal levels. This is an important facet of reflecting a uniform decision-making process and disseminating of a uniform message to the citizens of the national capital region.

In any interaction with the media, the goal is to ensure that information is accurate, timely, and consistent.

F. End Event

Based on the continued monitoring of the situation, the governmental leadership, under advisement of the technical and operational bodies, will determine when the emergency has ended.

SECTION II, ANNEXES

Annexes. Each Annex is divided into three sub-sections:

- Description: A description of the function covered in the Annex.
- Point A: Information on current capability and applicable resources in the national capital region.
- Point B: A description of an enhanced response capability with suggestions to bring the existing system to the higher level of preparedness.

The presence of a 'Point A or Point B' in the Annexes was a function of information availability and BTF guidance. Not all Annexes will contain both Point A and Point B and some Annexes will contain neither. However, the framework is provided for future expansion of the document.

A. Annex: Passive Surveillance

Description:

Passive surveillance is the ongoing monitoring of certain pre-defined medical and public health criteria. Most current surveillance systems are based on laboratory-confirmed diagnoses. Syndromic surveillance for infectious disease also may be a sensitive tool for the early detection of infectious diseases. Key persons and entities that may be involved in passive surveillance, and the signs that might indicate a bioevent in each respective domain, are provided below:

Health care providers. This category includes but is not limited to: hospitals, primary care practitioners, public health, infectious disease physicians, infection control personnel, nursing homes, municipal employee health services, school health, morticians, and emergency medical services personnel. Potential indicators of a bioevent include: Unusual or exotic diseases, fevers of undetermined origin, unexpected increases in service demand or encounters with patients presenting with any of the reportable diseases of Maryland, Virginia, or D.C. and illnesses presenting with an influenza-like syndrome (ILS) above normally recognized seasonal averages. The CDC A-list may provide a more extensive group of agents to address.

Many other pathogens and toxins exist that are on the NCR Departments of Public Health lists of reportable diseases. Some of these pathogens have the potential to be employed as bioterrorism agents. Reporting of these diseases should therefore continue. [See the section on local plans for the reportable diseases for the District of Columbia, Commonwealth of Virginia, and State of Maryland.]

Veterinary Clinics. Foreign animal diseases or emerging animal diseases (including those that are zoonotic.) Unusual rises in animal infectious disease encounters and unexplained animal deaths (especially those that occur in clusters). Definition for clusters is the presence of two or more cases (CDC).

Animal Control Agencies. Encounters with animals demonstrating foreign animal diseases or emerging animal diseases (including those that are zoonotic.) Unusual rises in animal infectious disease encounters and unexplained animal deaths (especially those that occur in clusters).

Office of Chief Medical Examiners (OCMES). This category includes but is not limited to deaths thought to be due to unusual or exotic diseases, diseases that present with ILS, specific zoonotic diseases, or those that are associated with a bioevent, higher than normal numbers of deaths, especially when the deaths appear to have occurred as a result of an unusual or exotic disease and/or occur in clusters a cluster of ILS deaths, or ILS deaths that are above seasonal averages and/or a number of non-traumatic deaths recorded and/or accepted for postmortem examination that is unusually higher than daily averages.

Pharmacies. Unusual rises in the purchase of antiviral, antibiotic, and anti-diarrheal medications, both prescription and over-the-counter (OTC), may signal an emerging health crisis, including outbreaks of bacterial or viral illness as well as toxin-based illness such as staphylococcal enterotoxin B. Indicators include: unusual spikes or clusters of prescriptions or OTC sales over baseline levels.

POINT A – Current Resources

1. Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) --- (Courtesy MAJ Julie Pavlin, MD, MPH; Chief, Strategic Surveillance, DoD, Global Emerging Infections System (GEIS), Walter Reed Army Institute of Research (WRAIR).

The Department of Defense – Global Emerging Infections System (DoD-GEIS) has developed a prototype system for early detection of infectious disease outbreaks at military treatment facilities (MTFs). Surveillance of syndromes recorded at the time of patient visit instead of specific diagnoses reported after laboratory or other diagnostic procedures can greatly lessen the time it takes to determine that an outbreak is occurring.

DoD-GEIS is currently collaborating with the COG Health Officers Committee and academic institutions to share data and to incorporate civilian emergency room data and managed care data into ESSENCE. The three years of historical data compiled by DoD-GEIS since its inception in 1997 provides an invaluable tool to the national capital region, which does not have its own database from which to establish a baseline and subsequent aberrance. With a population of more than 600,000 military personnel, dependents, and retirees in the area ESSENCE represents an excellent cross-section of the population.

2. Metropolitan Washington Public Health Assessment Center (MWPAC)

The MWPAC was established jointly by the School of Public Health and Health Services of The George Washington University, the Metropolitan Washington Public Health Association, the District of Columbia Department of Health, the Maryland Department of Health and Mental Hygiene, the Virginia Department of Health, and the Health Officers Committee of the Metropolitan Washington Council of Governments (COG). Its goal is to improve the health of the population of the national capital region through better information-sharing by developing and maintaining a regional system of communication, analysis, and reporting on health promotion and disease prevention goals and activities, and on the incidence of communicable and epidemic disease in the region with the local health departments, and the District of Columbia, State of Maryland, and Commonwealth of Virginia Health Departments.

B. Annex: Detection

Description:

In an unannounced bioterrorism incident, detection occurs when irregularities in one or more key local indicators present during passive medical and public health surveillance :

- Unexplained Deaths
 - Meningitis, encephalitis, acute encephalopathy, or acute delirium
 - Unexplained paralysis/paresis, or other neurologic symptoms of rapidly progressive onset including ptosis, diplopia, dysphagia, or seizures
 - Rash or other skin/mucosal lesions with a history of fever
 - History of fever and respiratory disease to include one or all of the following: dyspnea, tachypnea, hypoxia, abnormal chest x-ray
 - Shock or sepsis syndrome with history of fever or hypothermia
 - Diarrheal illness with fever
-
- **EMS.** Large overall demands for emergency medical service (EMS), particularly those patients complaining of influenza-like syndrome (ILS) or respiratory syndrome (including asthma, ILS-associated respiratory syndrome, other possible causes of respiratory syndrome).
 - **Hospitals or private practitioners.** Increased overall hospital admissions, emergency department activity, admissions of patients complaining of ILS or respiratory syndrome, intensive care unit (ICU) admissions. Unusual illness in a selected population (e.g., outbreak of severe rash illness affecting adults). Higher morbidity associated with a common disease or syndrome, or failure to respond to usual therapy. Single case of a disease caused by an uncommon agent (e.g., smallpox, viral hemorrhagic fever, or pulmonary or cutaneous anthrax). Endemic disease with unexplained increased incidence (e.g., tularemia, plague).
 - **Medical examiners.** Overall deaths reported from medical examiner, deaths accepted for investigation/post mortem, deaths associated with ILS, or deaths determined to be unusual. Higher mortality associated with a common disease.
 - **School health programs.** Encounters of ILS, respiratory illness, or an increase in numbers of absentees above an established baseline.
 - **Select government agency employee health services.** Observation of unexplained increase in people seeking help or presenting with unusual illnesses.

C. Annex: Active Surveillance and Investigation

Description:

When a public health surveillance program identifies an aberration (an excursion that is statistically above the expected value), local health departments, in concert with their respective state health departments, should conduct preliminary investigations. When an aberration occurs, the health department should expand its observational activities and poll emergency departments, pediatricians, family physicians, internists, and other infection-control practitioners to ascertain the context and possible cause of the non-specific indicators.

When an aberrant community health problem is confirmed and no specific cause for the increased patient load is ascertained, the local health department should begin an active investigation.

Possible data to collect during active surveillance should include hospital admission sheet data, travel history, symptoms, EMS runs and transportation refusals, and identification of contacts and family members. Once it is determined that a full epidemiological investigation is needed, the health departments of the affected areas should initiate an epidemiological investigation that is based on analysis of preliminary data, or analysis of other information pointing to a possible bioevent. If bioterrorism is suspected, local law enforcement authorities and the Federal Bureau of Investigation shall also be notified.

An epidemiological investigation will establish the case definition, interview victims and physicians, track distribution of cases, define the population at risk, and begin to make recommendations regarding mitigation. .

According to the CDC, the critical path to determining the use of a biological agent should include six primary steps:

- **Identifying an outbreak.** Examining public health surveillance data, population at risk, and signs and symptoms.
- **Verifying the diagnosis.** Examining signs and symptoms and laboratory diagnosis.
- **Establishing a case definition.** Beginning with simple objective criteria, starting broadly and focusing narrowly later. Determining whether individuals identified thus far meet the definition.
- **Identifying and counting cases.** Determining whom else is involved and who could potentially be involved considering incubation and possible exposure.
- **Describing epidemiology.** Collecting demographics, including names, ages, sexes, workplaces, and residences; determining time of illness onset and of potential exposure; and tracing the outbreak curve.
- **Developing a hypothesis.** Explaining how and why the outbreak occurred, the point of dissemination, the mode of spread, why some individuals became ill and not others, whether the outbreak poses an environmental hazard, and the population at risk. Consider early control measures.

D. Annex: Diagnosis

Description:

Although a preliminary diagnosis may be made locally, public health officials should send biological samples through their chain of custody to the state specialty laboratory and the Centers for Disease Control and Prevention (CDC) for final confirmation. Veterinary diagnosis also should be obtained in cases where animals are diseased or act as vectors or hosts for vectors.

Appropriate biological samples (i.e., sputum, blood, or urine) should be taken for laboratory identification, and these samples should be sent through appropriate channels to a designated local laboratory that has the ability to identify bioterrorism agents.

When a patient is diagnosed with such a disease, or when a laboratory makes a presumptive identification of any of these agents, the public health department should be contacted to initiate an epidemiological investigation and aid in determining the scope of the event. A formal protocol should be in place to ensure that appropriate agencies are notified promptly.

E. Annex: Medical Prophylaxis

Description:

Medical prophylaxis is the distribution and medical application of appropriate antibiotics, vaccines, and other medications to prevent disease and death in exposed victims. Preventive medicine, in the form of prophylaxis, is the most effective treatment available in a bioevent. Preventing illness eliminates the need for acute care and forestalls the possibility of communicating the illness to others. Medical prophylaxis is effective for only some of the biological agents.

During a declared emergency relating to a bioevent, the Public Health Departments in concert with the Emergency Management Agencies should assess the need to activate the first phase of a mass care strategy, which focuses on medical prophylaxis of a fixed population. Area hospitals, neighborhood health clinics, urgent care centers, employee health centers, private medical doctors, and the Red Cross may become the primary sites for medication distribution. These facilities should coordinate their effort and begin functioning as a unified body.

The speed with which a medical prophylaxis program can be implemented effectively is critical to the success of the program. Application of medical prophylaxis traditionally required identification of the population at risk, which may not be simple in an intentional bioevent. Consequently, prophylaxis may be applied to a much greater number of people than those actually exposed to the agent, perhaps even to an entire area population.

The National Pharmaceutical Stockpile (NPS), which is discussed in more detail under Point A - Current Resources later in this Annex, requires planning at the state and local levels for these items:

- Receipt and security of materiel
- Distribution of materiel from airport
- Storage, packaging and handling of materiel
- Treatment protocols
- Interagency communications
- Dispensing protocols

Prophylaxis decisions in a resource-scarce environment and under disaster conditions can be very difficult. Therefore planning can provide protocols that are medically grounded and help to preserve human infrastructure and the public's health. In order to ensure maintenance of essential community services, the NCR should make every effort to protect its "human infrastructure." EMS personnel, law enforcement, utility and transportation workers, hospital workers, and their families are a high priority for prophylaxis. This is necessary to allow critical responders to remain healthy and, by ensuring their families' safety, maintain their willingness to report for work.

Two options for prophylaxis/immunization may be simultaneously followed. Mass prophylaxis centers (fixed and mobile), with pre-designated sites ensuring appropriate access to all individuals requiring prophylaxis within a specified geographical location, should be the primary means of dispensing, while a system of home delivery will accommodate those unable to travel to the POD. Quickly implementing these additional distribution sites will help prevent existing clinics from becoming overwhelmed.

Other special considerations of medication distribution sites include:

- **Minors.** Each state in the NCR should pre-determine if parental permission is required to dose children, or if they should seek a waiver because of the state of emergency.
- **Physical Plant.** Establishment of points of dispensing needs to take into account weather elements, shelter and security.
- **Mobile dispensing vehicles.** These vehicles (commuter buses, school buses, etc.) can be dispatched to retirement communities, group homes, extended care facilities, and homes of individuals with special needs, including homebound individuals. EMA, local health departments, home-care provider agencies, hospitals, 911 centers and other city human service agencies, should identify these groups of individuals.
- **Schools/commercial facilities.** Schools, businesses (more than 100 employees), and large office buildings (including government offices) may be used to dispense medications.
- **High-rise residential units.** A supply of medications can be dispensed directly to high-rise residential complexes to be dispensed to their residents.
- **Neighborhood canvassing.** The services of police, fire, EMS, National Guard, military (both active and reserve components), community health personnel, and volunteers may be called upon to assist allocating medication to ensure rapid distribution of prophylaxis. In the event of a communicable disease such as smallpox, adequate protective measures must be provided to participating personnel.
- **Non-domiciled outreach.** The homeless population in the city may be provided medication and information packets through a coordinated effort that is spearheaded by the health departments and departments of social services. Organizations who regularly deal with this segment of the population should be enlisted to help in this effort.

The personnel needed to provide immunization and medication prophylaxis may be drawn from existing staff at the primary dispensing points (i.e., hospitals, neighborhood health centers, and freestanding urgent care centers). However, if the health care system is already overwhelmed, auxiliary personnel to staff these and other designated POD (including door-to-door care) could be recruited from the following sources: American Red Cross volunteers, emergency medical technicians (EMTs), National Guard and Reservists, retired physicians, nurses, dentists, and veterinarians. Personnel also should be recruited from these other sources: medical, dental, nursing, veterinary, physician-assistant, and public health students; home healthcare agencies; public health departments; religious organizations (i.e., churches, synagogues, etc.); and state and

federal supporting agencies. Once again, it will be necessary to plan these arrangements and ensure that designated individuals are aware of their roles in this process and plans conform to health standards.

All participating volunteers will need to be credentialed by a simple application process and should receive an information and tool packet that includes such items as an identification card, HEPA filter masks, surgical gloves, and a Standard Operating Procedure (SOP) that is simple to read and understand.

This plan should include such items as pre-packaging of medications, and multilingual information pamphlets.

It is recommended that a public information system be established to include frequent press releases via printed and television media, and an internet-based web application be utilized to release timely information and locations of OPTCs. The web site should include an OPTC/AMC locator into which the public can enter street addresses and cities. The application will then cross-reference the address against a database of OPTC/AMC sites and provide the closest location of a POD. The application also can be expanded to include a graphical map display as well as transportation directions or instructions relative to a specific address.

A 24-hour hotline for use by the public to acquire up-to-the-minute information and to determine the location of their closest OPTC is recommended. Press releases should clearly state that those members of the public who do not have Internet access should call this toll-free number. Operators of the phone lines should have direct access to the identical web-based database at their workstations. However, those who do have Internet access will be encouraged to use the web interface to reduce telephone traffic.

In addition an informational resource should be established for access by health care providers to communicate provider specific information and updates. This can be by website, broadcast faxes, etc.

All avenues of communication with the public, including press releases, Internet, and telephone hotlines, should have multilingual capability, and TTY capability should also be available at the 24-hour hotline center, with trained operators on duty at all times.

POINT A – CURRENT RESOURCES

1. National Pharmaceutical Stockpile (NPS)

The role of the CDC's NPS is to maintain a repository of life-saving pharmaceuticals and medical materiel for delivery to communities experiencing a chemical or biological incident in order to reduce morbidity and mortality in civilian populations.

The stockpile comprises a two-tiered approach:

12-hour "Push Packages"

These can reach disaster sites within 12 hours of federal activation and are pre-positioned at eight different sites across the U.S. Each pre-configured packet consists of pharmaceuticals, intravenous and airway supplies, emergency medications, bandages and dressings, and is intended to supplement local assets. Additionally, pertinent patient information sheets, provider information sheets, and data collection sheets are included.

Vendor Managed Inventory (VMI) Packages

These packages will provide more tailored materiel, based on the suspected or confirmed agent, to the scene within 24 to 36 hours. This is made possible by a partnership between the CDC and the Department of Veterans' Affairs, which has contracted with vendors and manufacturers to stock these additional pharmaceuticals and supplies.

The NPS is working on a state planning guide for receiving, organizing, repackaging and distributing the NPS. It is presently in draft form and will be made available to the NCR when completed.

2. The Capital Area Crisis Response Team (CACRT) and National Organization for Victim Assistance (NOVA)

The CACRT is a private, nonprofit organization of volunteer crisis interveners, educators, victim assistance specialists, and allied professionals who meet the emotional needs of traumatized victims of disasters and crime. CACRT rapidly mobilizes community response teams following a disaster and provides on-scene services at no cost. The crisis intervention strategies are based on a widely accepted model of crisis response developed by NOVA.

NOVA's mission is to promote rights and services for victims of crime and crisis and, through its National Community Crisis Response Team Project, it has sent trained professionals to over 80 communities that have been traumatized by a catastrophe, such as Hurricane Andrew and the Oklahoma City bombing, Bosnia, Croatia, and earthquake-stricken Kobe, Japan.

A bioevent will result in many concerned and panicked citizens who will be vying for a limited supply of resources. Mental health professionals from organizations such as CACRT and NOVA will be extremely useful in attempting to diffuse some of the anger and confusion that are inevitable in time of crisis.

POINT B – FUTURE ENHANCEMENT

The U.S. Postal Service may be asked to deliver medication and instruction packets to affected areas. The role of neighborhood canvassing will increase in the event that the biological agent is highly contagious and individuals are instructed to remain at home to prevent person to person spread. It will be necessary for the NCR to consider developing a MOA agreement with the U.S. Postal Service.

F. Annex: Medical Response Expansion Program (MREP)

Description:

Successful management of a large scale bioevent will depend on a number of assumptions:

- A large-scale bioevent may produce thousands to hundreds of thousands of casualties and/or fatalities.
- During a bioevent, actual infected casualties, together with those who may potentially have been exposed, will overwhelm EMS, outpatient clinics, and hospitals. Current bed capacities are shown under current resources.
- Hospital resources should be redirected to care for the most seriously ill. Elective admissions should temporarily cease, while critical medical/surgical and 911 functions will continue.
- A simple system that rapidly integrates medical resources and provides massive casualty management will be needed.
- Establishing a system to quickly expand outpatient and inpatient acute care facilities is necessary to provide rapid treatment to a large population of severely ill bioevent patients.
- During a large-scale bioevent, the standard of care will need to accommodate all affected people. In a mass casualty situation, health care workers will provide care to as many victims as possible, but individualized treatment plans may be rare or non-existent. A de-centralized team approach to providing basic medical care may be the most effective use of resources. Advanced life-saving technology and treatment options will either not be available, or they will be unable to be implemented due to lack of specially trained medical personnel.

Implementation of a mass patient care management plan may involve the following:

- The NCR emergency management agencies, together with the regional hospital associations and public health departments, should be responsible for establishing, maintaining, and overseeing the NCR operation of the casualty collection points. Outpatient Treatment Centers, and Alternative Medical Centers. This includes credentialing of personnel, in concert with sponsoring hospitals.
- The District of Columbia is in the process of pre-identifying casualty collection points in all sectors of the District that can be activated as requested through EMA. These pre-designated sites exist in other cities (e.g., Baltimore), and it is recommended that this step be included as part of the pre-planning process by all COG jurisdictions.
- The use of hotels, schools, etc. may be considered as alternative care facilities, but Memoranda of Agreement or contingency contractual agreements must first be developed before these become viable options.

- The expanded inpatient facilities (Alternative Medical Centers) will be most efficient if their services are directed exclusively to victims of the bioevent. Bioevent victims who also require acute or critical medical treatment of urgent conditions, such as heart attack or traumatic injuries, should receive care at the existing medical facility where more diverse resources are available.
- The type of agent used and the resulting illness will determine the composition of the Alternative Medical Center (AMC). The number of casualties expected to survive versus the anticipated number of fatalities will dictate the allocation of medical staff.
- Assuming bed space is available, the AMC should be an extension of a nearby medical facility (hospital) and transparent to the public. Ideally, the general public would seek initial care from either the Outpatient Treatment Center (OPTC) or the Emergency Department (ED) of their local hospital.
- If the former is not possible, then the OPTC and AMC will function more efficiently and will require less dedicated specialized resources if they are located adjacent or very close to the hospital(s) in the affected region.
- Medical and support personnel, as well as supplies required to establish and sustain the AMC, together with some facets of the OPTC, will need to be drawn from both local and outside resources. (Supplies should be cached as part of planning and as these dwindle, outside resources should be requested.) Requirements should be identified through state and federal emergency management plans, the Governor's Mutual Aid Assistance Compact (EMAC), and the Federal Response Plan. Local and regional Memoranda of Understanding may exist with some agencies but must be coordinated for all appropriate agencies.
- As the need for medical services increases, the jurisdictions of the NCR can implement Phase I of the Medical Response Expansion Program (MREP), which focuses on expanding the community's existing outpatient and inpatient treatment capabilities.
- Outpatient centers initially should implement a triage policy caring for the sickest patients first. Then, as the system becomes further overburdened, the triage policy should refocus to treat those most likely to survive with the level of care available. If possible, staffing should be increased to help manage an increased patient load.
- Hospitals will need to activate their internal disaster plans and begin re-directing their limited resources to care for the most seriously ill. Elective admissions will temporarily cease, while critical medical/surgical and EMS 911 functions continue. Inpatients stable enough for discharge or transfer to another suitable facility will be identified and processed as quickly as possible. In addition, hospitals will need to increase staffing in order to begin maximizing their use of internal bed space by admitting patients to outpatient surgical areas, treatment rooms, and other short-term treatment and holding areas (i.e., radiology, endoscopy suites, and waiting rooms).
- When necessary, the jurisdictions of the NCR should implement Phase II of the MREP. During this phase, designated casualty collection points and mass care facilities capable of offering outpatient services (Outpatient Treatment Centers – OPTC) and inpatient services (Alternative Medical Centers – AMC) are mobilized to provide care to bioevent victims.
- OPTC's and AMC's should be established quickly in structures of sufficient size that are located close to existing hospitals. These locations should be able to share

hospital resources and services more easily, including food preparation, laundry, pharmacy, and lab services. Examples of suitable facilities include schools, community centers, hospital cafeterias, and hotel conference rooms. These structures are advantageous because they contain adequate floor space for patient care, bathrooms, kitchens, refrigeration, laundry service, electricity, and generator backup. Ideally, the selected building will be large enough to allow all patient services to be provided on a single floor. This type of layout will minimize the need for additional support personnel.

- The identity of the agent and its infectious characteristics, combined with real-time epidemiological information, will influence the number of mass care facilities activated. These factors will also determine whether emphasis will be focused on outpatient or inpatient care. For example, biological agents that are incapacitating but have a low mortality rate (i.e., Q-fever, brucellosis, or VEE) will require a greater emphasis on outpatient treatment. Biological agents known to have a high mortality rate (anthrax, plague, and tularemia) will necessitate more inpatient medical care.
- Plans to utilize ancillary care organizations, such as nursing homes, rehabilitation hospitals, and group homes, as acute care facilities or OPTC's can be made. Planning must reflect the capabilities of the physical plant and staff of these institutions.
- The level of care provided at the OPTC and AMC will be supportive and should include agent-specific therapy, non-invasive respiratory care (i.e., bronchodilators and suctioning); intravenous hydration; pain management; treatment of nausea, vomiting, diarrhea, anxiety; and treatment of minor exacerbations of underlying disease. OPTCs can also provide mass distribution of medications along with minor wound and trauma management (i.e., wound irrigation, dressings, and orthopedic splinting). A temporary morgue can be set up at the OPTC and AMC to manage the deceased.
- OPTCs and AMCs may also be established in areas distant from hospitals to create a medical presence in the greater community and permit local residents to travel shorter distances. Dispersed AMCs may be particularly prudent if the bioterrorism agent is contagious. National Disaster Medical System (NDMS) Level I Disaster Medical Assistance Teams (DMATs) could be used to accomplish this mission. (See Point B, step 2 later in this Annex for additional staffing resources.)

POINT A – CURRENT RESOURCES

1. Hospital Mutual Aid Radio System (H-MARS)

Several years ago, the District of Columbia Hospital Association (DCHA) created H-MARS. This system links seventeen of its eighteen member hospitals (including Malcolm Grow Medical Center at Andrews Air Force Base and the National Naval Medical Center) through the installation and operation of a hard-wired radio located in each hospital's emergency department. This provides a communications line devoted exclusively to enabling all hospitals to communicate with one another as well as DCHA leaders, the District of Columbia Fire and EMS Department, the DC Mayor's Office, and the DC Emergency Management Agency.

To ensure that H-MARS is functioning correctly, an unannounced daily check of the system is made. Each hospital is responsible for maintaining the radio and ensuring that

a trained individual capable of operating the system is available on every shift. H-MARS has proven to be an extremely valuable tool in emergency medical events, most recently a fire in the Metro system.

Funding was recently received from USPHS/OEP to upgrade this to a regional radio system for the National Capital Region (NCRRS). This should lead to the integration of Maryland and Virginia hospitals and fire departments in the National Capital Region and to the creation of a link to the Metropolitan Medical Response System.

2. Metropolitan Medical Response System (MMRS)

The Metropolitan Medical Strike Team (MMST), which was the forerunner of the MMRS and NMRT in the metropolitan Washington area, was the prototype for others across the country. Started in 1995, it was initially a chemical response team and used combined personnel and equipment from Washington DC, Arlington and Fairfax counties (Virginia) and Montgomery and Prince George's counties (Maryland).

The team was able to provide emergency medical services, decontamination of victims, mental health services, plans for disposition of fatalities, and plans for the forward movement of patients to regional health care facilities, as appropriate, via the National Disaster Medical System (NDMS). There are now many of these teams in the United States.

The Office of Emergency Preparedness (OEP), in an attempt to demonstrate the importance of the system, subsequently changed the MMST name to the MMRS. This reflects the ongoing effort by OEP to effectively integrate not only fire, EMS, and HazMat, but also hospitals, laboratories, public health officials, poison control centers, mental health professionals, infectious disease experts, surrounding communities, states, and the federal government.

The MMRS's goal is to provide an effective health system response to chemical, biological, radiological, and nuclear incidents, as well as a naturally occurring outbreak such as pandemic influenza. Their goal is also to reduce morbidity and mortality.

2. National Medical Response Team – Weapons of Mass Destruction (NMRT-WMD)

This is a specialized response force designed to provide medical care following a nuclear, biological, and/or chemical (NBC) incident. This unit is capable of providing mass casualty decontamination, medical triage, and primary and secondary care to stabilize NBC victims for transportation to tertiary care facilities. There are four NMRTs in the NDMS program, with one of these teams located in the national capital region. This team is unique in that it does not have a DMAT to support it but will hand off patients to the local EMS. Unlike its counterparts, it is a static force that may only be deployed by the President of the United States.

An NMRT consists of approximately 50 members. The teams are self-sufficient in regard to their medical and decontamination operations, with the exception of the water

used for decontamination purposes. Each team is equipped with its own chemical and biological monitors and detectors, which are used primarily for personnel and victim safety. Additionally, each team carries medical supplies and medications, including antidotes, to manage 1,000 victims of a chemical incident.

Requests for NMRT come from federal, state, or local officials to the NDMS duty officer, who will process the request through the Office of Emergency Preparedness and/or the OEP Emergency Operations Center (OEP/EOC) and obtain final approval from the Assistant Secretary of Health.

The NMRT is equipped and trained to perform the following specific functions:

- Provide mass or standard decontamination
- Collect samples for laboratory analysis
- Provide medical care to contaminated victims
- Provide technical assistance to local EMS
- Assist in triage and medical care of NBC events before and after decontamination
- Provide technical assistance, decontamination, and medical care at a medical facility
- Provide medical care to Federal responders on site
- Provide conventional medical care to victims of a non-NBC event

Teams mobilize with two 15-passenger vans and two crew-cab trucks towing utility trailers.

3. Critical Care Bed Tracking System

One prototype for this system is currently in operation at Inova Fairfax Hospital. It provides an optional method of maintaining communications between hospitals and pre-hospital care in a disaster setting. Each hospital has secure access to a website that lists all the regional healthcare facilities and their current status, which is defined by the following terms:

- Fully open
- On re-route status
- Closed (due to structural damage)

The re-route status can be further sub-divided in terms of red, yellow, or green (triage categories) beds available. During normal (non-disaster) times, daily use of the system can list medical, operating room, or surgical critical care bed availability. Use of the system on a daily basis ensures that no new procedures need be implemented to communicate between facilities, EMS, and the Incident Commander.

The database is located on a secure server maintained by an independent contractor who offers 24/7 support. The computer screens and menus are self-explanatory, which eliminates the need for user training. Each hospital has a unique password to make changes to its status, but the central dispatch office has global control and may override any hospital.

The system represents the first step in linking different types of healthcare providers and may easily be expanded to handle more aspects of disaster care, such as patient tracking and resource inventory.

4. Enhanced Consequence Management Planning And Support System (ENCOMPASS)

ENCOMPASS is a Defense Advanced Research Projects Agency (DARPA) sponsored project that provides a suite of real time web-based consequence management programs that include these areas: Incident Management, Casualty Management and Tracking, Medical Facility Management, and Checklist Management.

ENCOMPASS needs a standard web browser and a 28.8 modem to access the secure, password-protected central repository.

Casualty counts are available by location, triage code, and chief complaint through the Casualty Tracking component, which enables inquiries as to victim whereabouts based on current/past locations, triage, and demographic data.

The Critical Care Bed tracking system described above enables the management of medical facilities by providing current bed census at all involved hospitals according to specialty.

The Incident Management portion is provided in part by the Electronic Watchboard (EWB). This uses Smart Message technologies to pull critical data from heterogeneous databases and push “just-in-time, just what is needed” information to planners and operators. It is a situational assessment tool that displays data about the incident as the incident evolves and allows the on-scene commander to communicate this information to other command posts, higher headquarters, and other supporting agencies. Field devices collect data that monitor the flow of casualties and responders in and out of the hot zone, record on-site medical information that can be forwarded to other treatment facilities, and assess variations of the affected area. An integrated GIS mapping tool provides a method to display geographic locations of the surrounding area.

5. Emergency Management Assistance Compact (EMAC)

The Emergency Management Assistance Compact (EMAC) is a mutual aid agreement and partnership between states that allows states to assist one another during emergencies. EMAC offers a quick and easy way for states to send personnel and equipment to help disaster relief efforts in other states. There are times when state and local resources are overwhelmed and federal assistance is inadequate or unavailable. Out-of-state aid through EMAC helps fill such shortfalls. Requests for EMAC assistance are legally binding, contractual arrangements making states that ask for help responsible for reimbursing all out-of-state costs and accepting liability for out-of-state personnel. States are assured that sending aid will not be a financial or legal burden for them. States are not forced to send any assistance unless they are able

Since being approved by Congress in 1996, as Public Law 104-321, thirty-four states and one territory have ratified EMAC, and several other states are in the process. The only requirement for joining is for a state's legislature to simply ratify the language of the compact. States are not even required to assist other states unless they're able. Maryland and Virginia are members. DC, absent statehood, is not yet a member, but is currently in the process of discussing a waiver of statehood so as to enable it to become a member of EMAC.

POINT B – Future Enhancements

Earlier discussion in this section is based upon many improvements being made in the current healthcare system. Expansion capability is limited, and at this time, hospitals have virtually no surge capacity. In order to accommodate the recommendations made for the MREP, it will be necessary to complete the following steps:

Step 1: Choose and secure sites to be used as Outpatient Treatment Centers (OPTCs) and Alternative Medical Centers (AMCs).

1. The EMAs in the metropolitan Washington area, in coordination with the appropriate public health departments and hospital associations, should identify locations throughout the national capital region that may be used as OPTC/AMCs. These locations should be recorded in a searchable database and plotted on a computerized map designed for cross-referencing.
2. Planners should keep the following points in mind when selecting OPTC/AMCs sites:
 - OPTC/AMCs sites should offer ample parking and easy access for private, emergency, and delivery vehicles.
 - OPTC sites should be large enough to process 1000 patients per day or an average of 42 patients per hour.
 - AMC sites should be large enough to house at least 250 inpatients (1000 patients ideally), grouped in 50-patient sub-units, with a minimum of five sub-units per facility.
 - In addition to patient care areas, the OPTC/AMC should be able to provide enough space for initial triage, admissions and registration, family/visitor waiting area, staff break room, pharmacy, administration (control center), communications, staff workstations, storage, locked security area, and temporary morgue. Inpatients should be able to rest on portable cots that can be arranged to maximize space and allow ample room between beds (at least 18 inches) for personnel to maneuver and circulate.

Step 2: Secure, train, and credential personnel to staff OPTCs and AMCs.

1. Depending upon the magnitude and geographic extent of a bioevent, staff for the AMC may need to be recruited from nearby hospitals and health departments that are located in non-impacted areas. Jurisdictions should establish mutual aid agreements to pull staff from these agencies, as necessary, to treat the large numbers of

anticipated victims and create the infrastructure necessary to integrate mutual-aid and state and federal assets.

2. Some of the staff at the OPTC/AMC should come from the local hospital to act as a liaison between these centers and the hospital. Access to other sources of trained personnel, such as National Guard Units, Army Reserve, VA hospitals, area military hospitals, public health clinics, MMRS units, and DMATs, should be pre-arranged by EMA through Memoranda of Understanding with regional hospitals and organizations.
3. Plans should be made to rapidly coordinate medical volunteers after an attack. These plans should require utilization of regional disaster plans, which should be coordinated by emergency management, the health department, and local hospitals.
4. OPTC/AMC staff should be trained to ensure their ability to operate within a disaster/medicine environment prior to opening these centers. Job action sheets should be created for each required position to help these preparedness efforts.
5. Personnel should be credentialed by appropriate medical and professional organizations in advance of an attack. The credentialing process should be coordinated by the appropriate area agency in order to streamline the process. A current license to practice should be sufficient for credentialing.

Step 3: Establish plans to optimize use of hospitals and AMCs.

1. ESF-8 should monitor bed availability at the hospitals and AMCs and coordinate all bed assignments for bioevent patients through their emergency operations center.
2. Non-traditional patient care areas in hospitals, such as same day surgical areas, the cafeteria, or auditorium, should be identified in advance through a coordinated effort between the hospitals' administration and the BTF. With planning, these sites could be converted to temporary patient treatment areas. Plans should also be established to augment staff to care for the increased volume of patients. The emergency management agencies should coordinate logistical support, equipment, and supplies.
3. EMS resources dedicated to the casualty management operation and supplemented by federal assets should provide standby and transport services in and around clusters of hospitals, clinics, OPTCs, and AMCs. These clusters should be able to transport patients from the hospitals and clinics to either OPTCs or AMCs as appropriate, relieving some of the pressure on hospitals. Where the volume of patients requiring transportation is high, the Medical Transportation Coordinator should use alternative methods.

Step 4: Ensure that OPTCs and AMCs maintain identical resources.

1. Jurisdictions establishing AMCs should coordinate to ensure that every AMC is set up identically and uses the same equipment and supplies. Uniform AMCs will allow rapid mobilization of additional facilities as dictated by patient surges.
2. Medical equipment, pharmaceuticals, and supplies for an AMC should be predetermined and stocked in designated caches.
3. The BTF, together with the EMAs, should coordinate with the states and the district to orchestrate, stockpile, and distribute the medical equipment caches. In addition, it

will be necessary to delegate responsibility for maintaining the continuous operational capacity of these centers to the appropriate agency or agencies.

Step 5: Establish plans to care for homebound patients.

1. The BTF, local health departments, and hospital associations plan with the American Red Cross, emergency management agencies, and local outreach organizations to assess and care for homebound patients.
 2. Planning for homebound care should include the elderly in nursing homes and group homes, as well as patients on home ventilators and others assisted at home by nursing and personal care agencies.
 3. A hotline should be set up to register these patients.
 4. An alternative plan to encourage patients to remain at home to receive care, envisioned by the Arlington County Fire Chief, should be evaluated for inclusion in a home care plan.
- The government would announce to all county residents that the only bed available would be the one in their own home. Instructions on self-care would be provided on a regular basis through various mediums, including television, radio, telephone hotline, and the Internet.
 - As an integral part of the planning process, a database according to “fire-box” would be set up, and grids would be created and staffed by off-duty firefighters (all cross-trained as EMTs in Arlington) and off-duty law enforcement officers.
 - In this manner, medications would be distributed and basic “disaster care” would be provided to people in their own homes so that only the most critical patients would be transported to area hospitals.

Step 6: Ensure that plans are established to integrate state and federal resources into the mass patient care response plan.

1. Requirements for state and federal integration should be communicated and coordinated with Federal HHS, through ESF-8 in the FEMA EOC, to set up, staff, and sustain patient treatment centers.
2. Federal resources should be used in the following manner at the request of the Emergency Management Agencies:
 - Disaster Medical Assistance Teams
 - Level I: Full DMATs may be used to establish AMCs with stand-alone staffing, materiel, and infrastructure.
 - Level II: Limited DMATs should be used to augment staff in overwhelmed hospitals and AMCs.
 - Other federal medical resources, such as military active duty or reserve hospital may be used at OPTCs and AMCs if deployed under a federal ESF-8 deployment and at the direction of HHS.

Step 7: Establish a plan for tracking victims.

1. Tracking victims is critical to ensure that they receive adequate patient care and to assess possible long-term sequelae for clinical and scientific purposes.

G. Annex: Resourcing EMS Capabilities

Description:

The local Emergency Operations Centers, in coordination and cooperation with NCR fire and EMS agencies, should designate specific EMS resources to provide stand-by and transport services in and around clusters of hospitals, clinics, OPTCs, and AMCs. These EMS resources should not, if possible, be used for 911 services. Rather, these units should be dedicated to the MREP casualty management operation to provide rapid intervention and transport services.

Fire and EMS agencies, in cooperation with the state and local emergency management, should designate and define EMS transport zones (groupings of hospitals, OPTCs, and AMCs), known as clusters. Each cluster should have at least one designated EMS unit, with more available as the need rises. If the demand for EMS services is great in the general community, mutual aid will be requested through established agreements within and outside the national capital region operating area. Commercial ambulance providers are an active component of mutual aid agreements, and additional federal assistance may also be considered (DHHS, DoD, or NG) through FEMA.

The operation and activity of cluster EMS units will be coordinated through Emergency Support Function (ESF)-8 (Health and Medical) in the state EOCs.

POINT A – CURRENT RESOURCES

ANNEX G, FIGURE 1: NATIONAL CAPITAL REGION FIRE AND EMS RESOURCES

	Fredrick County Fire and Rescue	Prince William County Fire and Rescue	Loudon County Fire and Rescue	DC Fire and EMS	Montgomery County Fire and Rescue	Fairfax County Fire and Rescue	Metropolitan Washington Airport Authority	Arlington County Fire and Rescue	Alexandria Fire and Rescue
Personnel									
Number of Career Personnel	77	236	80	1187	916	426	123	255	187
Number of Volunteer Personnel	1500	805	1148		790	384			
Total Uniformed Personnel	95	236	105	1274	1706	1137	123	255	201
Total Number of Non-Uniformed Civilian Personnel	8	24	24	492	63	182	1	13	65
Number Staff Certified of EMT-B	762	166	400	996	1880	842	98	195	138
Number Staff Certified EMT-C	4	66	31		10	211	3	10	13
Number of Certified EMT-D			250	996		1220			138
Number Staff Certified EMT-P	63	50	47	140	263	167	17	62	36
Number of Certified HazMat Personnel	55	216	43	835	831	1500	122	265	145

EMS Apparatus

Number of BLS Support Engines	22	16	15	32	33		2	8	11
Number of ALS Support Engines				32	15				
Number of Paramedic Engines				2		34		2	
Number of Basic Life Support Units	32	16	2	21	23	18			
Number of Advanced Life Support Units	7	8	27	15	21	21	3	5	4
Number of Transport Capable Units	32	8	29	34	76	39	3	5	4
Number of Non-Transport Units (chase vehicles)	7ALS	11	4	2	1		1		1

**ANNEX G, FIGURE 1: NATIONAL CAPITAL REGION FIRE AND EMS RESOURCES
(continued)**

		PG County Fire and Rescue	Fairfax City Fire and Rescue	Naval District of Washington	All American Ambulance	Rural Metro	Lifecare	Loudon-Fairfax	Professional	Physicians
Personnel										
Number of Career Personnel		524	51	57						
Number of Volunteer Personnel		1000	26							
Total Uniformed Personnel		593	85	66						
Total Number of Non-Uniformed Civilian Personnel		85	13	7						
Number Staff Certified of EMT-B		802	71	41						
Number Staff Certified EMT-C		6	8	69						
Number of Certified EMT-D			71							
Number Staff Certified EMT-P		166	24							
Number of Certified HazMat Personnel		1689	77	55						
EMS Apparatus										
Number of BLS Support Engines		40	2	4						
Number of ALS Support Engines			2							
Number of Paramedic Engines										
Number of Basic Life Support Units		45			16	136 BLS/ALS			25	2
Number of Advanced Life Support Units		10	2		8	136 BLS/ALS	33	8	10	6
Number of Transport Capable Units		61	3				12	1		
Number of Non-Transport Units (chase vehicles)			2							

POINT B – Future Enhancements

EMS should be integrated into all components of the plan, including providing them with instructions for isolating of suspected cases and knowledge of pre-designated facilities that will act as receiving hospitals for these cases. A recent study on “The Role of EMS Systems in Public Health Emergencies” concluded, “the incorporation of the prehospital sector into an already existing framework for public health emergencies (i.e., epidemics) enhances the reach of the public safety surveillance net. It ensures that proper isolation is continued from identification of a possible case to arrival at a definitive treatment facility.”

H. Annex: Hospital Plan

Description:

Hospital emergency response plans should consider the following provisions. They should make every attempt to discharge stable patients, refer patients in need of mental health services to appropriate providers, and transfer suitable non-bioevent patients to other comparable outlying facilities in order to make bed space available for critically ill victims. This transport may be accomplished through the hospital's usual transport mechanism or through a mechanism established in the plan if ambulance resources are not readily available. Hospitals should limit elective, non-critical admissions while continuing to provide services to acutely ill bioevent and non-bioevent patients. Hospitals may consider the transport of in-patients, either bioevent or non-bioevent, to facilities out of the region in coordination with the NDMS. The state plans should ensure that adequate medical transportation and logistical support are provided to each of these centers to initiate and sustain operations. For more current data see www.dcha.org.

ANNEX H, FIGURE 1: NATIONAL CAPITAL REGION HOSPITAL RESOURCES – DECEMBER 1999 DISTRICT OF COLUMBIA HOSPITALS

	Med/Surg	OB/GYN	Peds	ICU	NICU	Psych	DECON	TRAUMA CTR	Substance Abuse	Other	Total
Children's National Medical Center			122	16	30	20	n/a	yes			188
Columbia Hospital for Woman	29	51		4	35		n/a	n/a	12		131
District of Columbia General Hospital	81	12	8	27	6		yes	n/a	15	35	184
George Washington University Hospital	186	16		27	18	34	yes	yes			281
Georgetown University Hospital	195	18	36	38	50	14	n/a	yes			351
Greater Southeast Hospital	180					20	n/a	n/a		36	236
Hadley Memorial Hospital	63										63
Howard University Hospital	178	32	23	28	9	24	n/a	yes			294
National Rehabilitation Hospital							yes	n/a			
Providence Hospital	201	48		17	9	29	yes	n/a	12		316
Sibley Memorial Hospital	162	22		14		20	n/a	n/a			218
Walter Reed Army Medical Center	130	0	30	28		40	yes	n/a		22	250
Washington Hospital Center	616	41		71	23	28	yes	yes		33	812
Total	1891	240	189	242	180	189			39	104	3074

ANNEX H, FIGURE 2: NATIONAL CAPITAL REGION HOSPITAL RESOURCES – DECEMBER 1999 NORTHERN VIRGINIA HOSPITALS

	Med/Surg	OB/GYN	Peds	ICU	NICU	Psych	DECON	TRAUMA CTR	Substance Abuse	Other	Total
INOVA Fairfax	408	91	57	54	12	34	yes	yes			656
INOVA Fair Oaks	62	46	8	35	7		n/a	n/a			151
INOVA Mt. Vernon	122			20		23	yes	n/a		67	232
INOVA Alexandria	207	39	24	50	16	19	yes	n/a		32	339
Potomac Hospital	100	20	12	9	5	12	yes	n/a		11	153
Prince William Hospital	99	14	14	11	10	32	yes	n/a		14	170
Loudoun Hospital	45	18	7	10	4					21	80
North Virginia Community Hospital (Vencor)	132			12		20	yes	n/a			164
Reston Hospital	63	27	13	8	8		yes	n/a		16	127
Arlington Hospital	215	40	15	24	12	40	yes	n/a		36	334
Total	1453	295	150	233	74	180				197	2406

ANNEX H, FIGURE 3: NATIONAL CAPITAL REGION HOSPITAL RESOURCES – DECEMBER 1999 MARYLAND HOSPITALS

	Med/Surg	OB/GYN	Peds	ICU	NICU	Psych	DECON	TRAUMA CTR	Substance Abuse	Other	Total
PG General Hospital	278			16			yes	yes			467
Southern Maryland Hospital	202			33			yes	n/a			358
Doctors Hospital	221			29							250
Laurel/Beltsville Hospital	106			10							179
Ft. Washington	29			4			yes	n/a			33
Holy Cross Hospital	205			14			yes	n/a			422
Suburban Hospital	246			12							338
Washington Adventist	186			34							300
Shady Grove Hospital	167			21							253
Montgomery General	136			16							213
Calvert Hospital	81			6							141
Charles County CIVISTA	104			10							131
St. Mary's Hospital	64			6							122
Total	2025			211							3207

* This data is based on the total number of licensed hospital beds

**ANNEX H, FIGURE 4: LARGEST NATIONAL CAPITAL REGION HOSPITAL BEDS, STAFFED VS. TOTAL
(From Washington Business Journal)**

<u>Hospital Name</u>	<u>Total Beds</u>	<u>Staffed Beds</u>	<u>Difference</u>	<u>Staffed Percentages</u>
(by state in alphabetical order)				
<u>Maryland</u>				
Anne Arundel Medical Center	301	301	0	
Frederick Memorial Healthcare System	228	228	0	
Holy Cross Hospital	428	412	16	
Laurel Memorial Hospital	185	185	0	
Montgomery General Hospital	244	192	52	
Naval Medical Center	229	218	11	
Prince George's Hospital Center	447	370	77	
Shady Grove Adventist Hospital	263	263	0	
Southern Maryland Hospital	358	350	8	
Suburban Hospital	397	222	175	
Warren Grant Maghuson Clinical Center (NIH)	325	325	0	
Washington Adventist Hospital	300	300	0	
Total in Maryland	3705	3366	339	90.85% of beds are staffed
<u>Virginia</u>				
Inova Fairfax Hospital	656	656	0	
Arlington Hospital	334	334	0	
Inova Alexandria Hospital	339	311	28	
Inova Mount Vernon Hospital	232	229	3	
Inova Fair Oaks Hospital	151	138	13	
Total in Virginia	1712	1668	44	97.43% of beds are staffed

ANNEX H, FIGURE 4: LARGEST NATIONAL CAPITAL REGION HOSPITAL BEDS, STAFFED VS. TOTAL (continued)
(From Washington Business Journal)

Washington, D.C. (Licensed Beds)				
Children's National Medical Center	279	188	91	
D.C. General Hospital	410	250	160	
Georgetown University Hospital	535	352	183	
George Washington University Hospital	501	312	189	
Greater Southeast Community Hospital	450	236	214	
Howard University Hospital	347	327	20	
National Rehabilitation Hospital	128	110	18	
Providence Hospital	408	316	92	
St. Elizabeth's Hospital	742	742	0	
Sibley Memorial Hospital	340	218	122	
Veterans Affairs Medical Center	167	167	0	
Walter Reed Army Medical Center	429	238	191	
Washington Hospital Center	907	819	88	
Total in Washington, D.C.	5643	4275	1368	75.76% of licensed beds exist and are staffed
Total in NCR	11060	9309	1751	84.17% of beds are staffed

ANNEX H, FIGURE 5: VA FEDERAL COORDINATING CENTER – NDMS HOSPITALS

VA	NDMS (VA-Managed)		NDMS	NDMS Beds	NDMS Beds
VISN#	FEDERAL COORDINATING CENTER		HOSPITALS	MINIMUM	MAXIMUM
3	Castle Point, NY (VA Hudson Valley HCS-Castle Point Division)		40	690	1,407
3	Long Island, NY (VAMC Northport)		32	730	1,794
3	Brooklyn, NY (VAMC Northport)		17	132	403
3	Lyons, NJ (VA New Jersey HCS-Lyons Division)		78	2,286	4,003
3	New York, NY (VAMC New York)		25	680	1,525
		VISN 3 TOTALS	192	4,518	9,132
4	Philadelphia, PA (VAMC Philadelphia)		90	2,119	4,380
4	Pittsburgh, PA (VA Pittsburgh HCS-Pittsburgh UD Division)		69	2,481	6,250
		VISN 4 TOTALS	159	4,600	10,630
6	Richmond, VA (VAMC Richmond)		16	637	1,068
6	Salisbury, NC (VAMC Salisbury)		97	2,858	4,836
		VISN 6 TOTALS	113	3,495	5,904

POINT A – Current Resources

The District of Columbia Hospital Association's Mutual Aid Memorandum of Understanding (MOU) is a voluntary agreement among the District of Columbia hospitals for the purpose of providing mutual aid to one another at the time of a medical disaster. The purpose of this mutual aid agreement is to help hospitals achieve an effective level of disaster medical preparedness by authorizing the exchange of medical personnel, pharmaceuticals, supplies or equipment, or the evacuation or admission of patients in the event of a disaster. All members of the DC Hospital Association are parties to the MOU. (See Section on Local Plans for Details).

POINT B – Future Enhancements

Regional cooperation should be extended to pooling resources, providing common training for staff, and standardizing emergency codes. The medical community will need to plan further to expand local capability to its maximum, supplement this with alternate care facilities, provide outreach in the community (home care), and determine patient evacuation. They should establish guidelines for personnel working outside their traditional job descriptions.

JCAHO, in new standards regulations published January 1, 2001(see section on local plans), is requiring that hospitals implement ICS and it is likely that the "Hospital Emergency Incident Command System" (San Mateo County Health Services Agency, Emergency Medical Services, 3rd edition, volume 1, San Mateo County, CA) will be used.

I. Annex: Federal Assets

Description:

This annex lists the coordinated federal assistance to supplement state and local resources in response to public health and medical needs following a major disaster or emergency. The support is categorized into the following functional areas:

- Health and medical needs assessment
- Health surveillance
- Medical care personnel
- Health and medical equipment and supplies
- Patient evacuation
- In-hospital care
- Food, drug and medical device safety
- Worker health and safety
- Radiological/chemical/biological hazards consultation
- Mental health care
- Public health information
- Vector control
- Potable water, wastewater, and solid waste disposal
- Victim identification and mortuary services
- Veterinary services

POINT A - CURRENT RESOURCES

Area hospitals, clinics, and private medical doctors may need to forego some of their normal autonomy and function as a unified body during a bioevent emergency declaration.

Hospitals, clinics, OPTCs, and AMCs should provide situation reports (SITREPS) directly to ESF-8 within local EOCs. Situation Reports (SITREPS) should be transmitted to ESF-8 either by fax or by secure email and should include this information:

- General status of activities and operations
- Current patient count
- Cumulative patient count
- Logistics or staffing needs

Hospitals, clinics, OPTCs, and AMCs can make requests for resources such as materiel, human resources, and pharmaceuticals directly to ESF-8. This will allow ESF-8 to coordinate the distribution of assets throughout the region based on resource availability. A section chief, who reports directly to the state Emergency Management Agency, should lead ESF-8. The ESF-8 section chief should coordinate with other ESF section chiefs to ensure that activities are cohesive and all objectives and requests are met.

1. The National Disaster Medical System (NDMS)

NDMS is activated through the Federal Response Plan, works within ESF-8, and is designed to fulfill three primary functions:

- To provide supplemental health and medical assistance in domestic disasters at the request of state and local authorities.
- To evacuate patients who cannot be cared for in the disaster area to designated locations elsewhere in the nation.
- To provide hospitalization in a nationwide network of hospitals to care for the victims of domestic disaster or military contingency that exceeds the medical care capability of the affected local, state, or federal medical system.

2. The National Disaster Medical Assistance Teams (DMATs)

NDMS, through the U.S. Public Health Service (USPHS), fosters the development of DMATs. A DMAT is a group of professional and paraprofessional medical personnel (supported by a cadre of logistical and administrative staff) designed to provide emergency medical care during a disaster or other event.

Each team has a sponsoring organization, such as a major medical center, public health or safety agency, non-profit, public, or private organization that signs a Memorandum of Understanding (MOU) with the USPHS. The DMAT sponsor organizes the team and recruits members, arranges training, and coordinates the dispatch of the team.

In addition to the standard DMATs, there are highly specialized DMATs that deal with specific medical conditions such as crush injury, burn, and mental health emergencies. Other specialty teams include Disaster Mortuary Operational Response Teams (DMORTs) that provide mortuary services, Veterinary Medical Assistance Teams (VMATs) that provide veterinary services, and National Medical Response Teams (NMRTs) that are equipped and trained to provide medical care for victims of weapons of mass destruction.

DMATs deploy to disaster sites with sufficient supplies and equipment to sustain themselves for a period of 72 hours, while they provide medical care at a fixed or temporary medical care site. In mass casualty incidents, their responsibilities include triaging patients, providing austere medical care, and preparing patients for evacuation. In other types of situations, DMATs may provide primary health care and/or may serve to augment overloaded local health care staffs. Under the rare circumstance that disaster victims are evacuated to a different locale to receive definitive medical care, DMATs may be activated to support patient reception and patient disposition at hospitals.

DMATs are designed to be a rapid-response element to supplement local medical care until other federal or contract resources can be mobilized, or the situation is resolved.

DMAT members are required to maintain appropriate certifications and licensure within their discipline. When members are activated as federal employees, all states recognize licensure and certification. Additionally, DMAT members are paid while serving as part-time federal employees and have the protection of the Federal Tort Claims Act in which the Federal Government becomes the defendant in the event of a malpractice claim.

DMATs are principally a community resource available to support local, regional, and state requirements. However, as a national resource they can be federalized to provide interstate aid.

3. Commissioned Corps Readiness Force (CCRF)

The U.S. Surgeon General created the CCRF in 1994 to improve the DHHS capability to respond to public health emergencies. HHS/OEP implements the responses and manages the system. CCRF consists of a cadre of USPHS officers uniquely qualified to mobilize in times of extraordinary need in response to domestic or international requests and to provide public health leadership and expertise. Capabilities include: “hands-on” care, technical assistance liaison support to OEP, FBI, FEMA, regional staff assistance, augmenting NDMS teams and responding to non-federally declared disasters, emergencies, or special events. Professional categories include: physicians, dentists, nurses, engineers, scientists, environmental health officers, veterinarians, pharmacists, dietitians, therapeutics, and health science officers. The CCRF membership is listed as 1,372 individuals.

4. Veterinary Medical Assistance Teams (VMATs)

The Federal Response Plan tasks the National Disaster Medical System (NDMS) under Emergency Support Function #8 (ESF-8) to provide assistance in assessing the extent of disruption and need for veterinary services following major disasters or emergencies. These responsibilities include the following:

- Assessment of clinical needs of animals
- Animal care and handling
- Animal sheltering and evacuation
- Animal inspection and disease surveillance
- Technical assistance
- Hazard mitigation
- Care and shelter of companion pets

In order to accomplish this mission, NDMS entered into a Memorandum of Understanding with the American Veterinary Medical Association (AVMA), a nonprofit organization, to develop Veterinary Medical Assistance Teams (VMATs). VMATs are composed of private citizens who are called upon in the event of a disaster. VMAT members are required to maintain appropriate certifications and licensure within their discipline. When members are activated, all states recognize licensure and certification, and the Federal Government compensates the team members for their duty time as

temporary federal employees. During an emergency response, VMATs work under the guidance of local authorities by providing technical assistance and veterinary services.

The National Disaster Medical System in conjunction with the Coordinator of Emergency Preparedness directs the VMATs for the AVMA. Teams are composed of clinical veterinarians, veterinary pathologists, animal health technicians (veterinary technicians), microbiologist/virologists, epidemiologists, toxicologists, and various scientific and support personnel.

5. American Red Cross

The American Red Cross (ARC) is a humanitarian organization, led by volunteers, which provides relief to victims of disasters and helps people prevent, prepare for, and respond to emergencies. Its primary lines of service are: disaster services, armed forces emergency services, biomedical services, health & safety services, international services, and volunteer services. It is the only non-governmental organization signatory to the Federal Response Plan for ESF-6 (Mass Care).

The National Capital chapter in Washington, DC has a paid staff of 106 and 250 disaster volunteers as well as mutual aid agreements with the surrounding counties that are members of the COG.

Services that will be of value following a bioevent are health services, mental health services, disaster welfare inquiry, family services, and mass care.

The National headquarters has 238 Emergency Response Vehicles (ERVs), 11 Communications Vehicles, 10 Supply ERVs, 10 Logistical ERVs, 10 warehouses strategically placed in the U.S. and an Air Team, which can respond to mass casualty events.

6. Weapons of Mass Destruction (WMD) Civil Support Teams (CST)

The WMD Civil Support Teams were established to provide rapid assistance to a local incident commander in determining the nature and extent of an attack or incident. They were also established to provide expert technical advice on WMD response operations and help identify and support the arrival of follow-on state and federal military response assets. Each team consists of 22 highly skilled, full-time members of the Army and Air National Guard.

The WMD Civil Support Teams are unique because of their federal-state relationship. They are federally resourced, federally trained, and federally evaluated, and they operate under federal doctrine. But they will perform their mission primarily under the command and control of the governors of the states in which they are located. They will be, first and foremost, state assets. Unless federalized, they fall under the command and control of the adjutants general of those states. As a result, they will be available to respond to an incident as part of a state response well before federal response assets would be called upon to provide assistance.

At this time, the closest operational team to the national capital region is the 3rd WMD-CST from Fort Indiantown Gap, Pennsylvania.

7. Centers for Disease Control and Prevention (CDC)

The Centers for Disease Control and Prevention (CDC) is recognized as the lead federal agency for protecting the health and safety of people - at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States. CDC, located in Atlanta, Georgia, USA, is an agency of the Department of Health and Human Services.

One of the CDC's missions is to protect individuals against emerging infectious diseases including bioterrorism as defined in the following statement. CDC will continue to fight against infectious diseases, with particular emphasis on emerging and antimicrobially resistant infectious diseases. We will reinforce international work to reduce and eliminate re-emergent infectious diseases. We will continue to strengthen local, state, and national public health capacity to respond to growing threats from biological and chemical terrorism.

J. Annex: Incident Management System

This planning guide embodies three overarching concepts:

- Operational issues, which are the responsibility of, and fall under the authority of, each local or state jurisdiction. The jurisdictions will follow their existing standard operating procedures and guidelines.
- Technical issues, which are dealt with by subject matter experts (SME)s and members of the Bioterrorism Task Force (BTF) – Annex L
- Policy issues, which is a function of the governmental leadership – Annex K.

The national capital region, by virtue of its composition with multiple counties, two states, and the District of Columbia, in all probability, will have multiple Emergency Operations Centers (EOCs) operating simultaneously. The number of operating EOCs could add to the complexity of the situation, and it is extremely important that the planning process coordinates efforts and facilitates communications among the different entities. To date, the Bio-Defense Steering Committee that has evolved into the BTF has provided an excellent forum for discussion of the various issues facing the region as a whole as it develops medical strategies for coping with possible bioevents.

POINT A – CURRENT RESOURCES

When local resources are inadequate to cope with the influx of patients, on request by the Emergency Management Agencies working in concert with the Departments of Health, the following federal resources can be made available to the national capital region.

1. Federal Response Plan.

Under the Stafford Act, a state governor may request the President to declare a major disaster or an emergency if an event is beyond the combined response capabilities of the state and affected local governments. No direct federal assistance is authorized prior to the emergency declaration; however, FEMA can use limited pre-declaration authorities to move Initial Response Resources and emergency teams closer to affected areas. Additionally, when an incident poses a threat to life and property that cannot effectively be dealt with by the state and local governments, FEMA may request the Department of Defense (DoD) to utilize its resources prior to a declaration to perform any emergency efforts deemed “essential for preservation of life and property.”

2. Military Support to Civilian Authorities (MSCA).

Imminently serious conditions resulting from any civil emergency or attack may require immediate action by military commanders, or by responsible officials of other DoD agencies, to save lives, prevent human suffering, or mitigate property damage. This function is termed “Immediate Response.”

K. Annex: Policy Makers

The national capital region's policy makers probably will convene to formulate policy affecting the region as a whole during a significant bioevent. Once these high-level policymakers have decided on a regional approach, they can provide this information to their respective jurisdictions. In no way is this intended to supercede the powers vested in the state and local authorities. The following list includes some of the many issues and needs that may be addressed:

- Activating the MREP based on region-wide casualty counts. This might include the activation and operation of Outpatient Treatment Centers (OPTC) and Alternative Medical Centers (AMC) for prophylaxis and casualty care (see Annex F: MREP)
- Activating a mass fatality strategy based on region-wide fatality counts and activities at local medical examiner offices (see Annex O: MEEP)
- Utilizing pre-designated locations/facilities as OPTCs and AMCs
- Staffing OPTCs and AMCs
- Providing medical resources, including personnel and materiel
- Instituting rapid prophylaxis and treatment
- Implementing quarantine or isolation measures (contagious agent)
- Obtaining additional support and federal assets
- Balancing the rights of the infected with those of the uninfected
- Considering the political, legal, moral, and ethical issues involved in civil liberties and the authorities of state and federal health officials³

³ Personal communication with Dr. Eric Noji, CDC

L. Annex: Bioterrorism Task Force (BTF)

The COG Bioterrorism Task Force (BTF) is intended to provide policy makers with advice that is based on technical and practical expertise. It should comprise select academic and scientific personnel and professionals or Subject Matter Experts (SMEs), with the current Bio-Defense Steering Committee forming the nucleus of this group (see BTF membership roster). Its role should be to discuss those issues that should be addressed at a regional planning level. Ideally, members should be drawn from the following disciplines:

- Public health (including federal, state, local and academic)
- Adult and pediatric infectious diseases specialists
- Veterinary science
- Epidemiology
- Laboratory science
- Emergency Management
- Law enforcement (including local law enforcement and FBI)
- Emergency medical service (senior clinical and operational members)
- Fire service
- Mental Health

The BTF is an inter-disciplinary advisory group of professionals who represent the following agencies:

- American Red Cross
- Association for Professionals in Infection Control
- Association of Funeral Directors
- COG Fire Chiefs' Committee
- COG Police Chiefs' Committee
- COG Public Safety
- DC Department of Health
- DC Emergency Management Agency
- DC Hospital Association
- DC Mayor's EMS Advisory Committee
- DC Office of Chief Medical Examiner
- Department of Defense
- Department of Veterans Affairs
- DMORTs
- Federal Bureau of Investigation Washington Field Office
- Federal Emergency Management Agency
- Federal Protective Services
- Greater Prince William Chem-Bio Counter-terrorism Committee
- Howard County Health Department
- Local military installations

- Maryland Department of Agriculture
- Maryland Department of Health and Mental Hygiene
- Maryland Emergency Management Agency
- Maryland Institute of Emergency Medical Services System
- Montgomery County Fire and Rescue Service
- Montgomery County Office of Emergency Management
- Montgomery County Office of Emergency Management
- Montgomery County Department of Health and Human Services/Public Health Services
- Office of the Attending Physician, U.S. Congress
- Prince George's County Health Department
- Prince William Health District
- The George Washington University School of Public Health and Health Services
- The George Washington University School of Medicine and Health Sciences
- United States Secret Service
- USPHS Office of Emergency Preparedness
- USPHS Region III
- Virginia Department of Emergency Management
- Virginia Department of Health
- COG Police Chiefs Committee

M. Annex: Communications and Public Information

The Public Information component is a critical piece of an overall plan. According to the Seattle MMRS BT Plan, “The degree of community cooperation with a mass care operation is... directly proportional to the timeliness, accuracy, clarity and integrity of information to the public.” They need to know “what happened, what biological agent was used, who is at risk, what remedial actions are in place/underway, who should receive immunization/prophylaxis, and how to get this treatment, and what is the prognosis for the uninfected and/or immunized population.”

Furthermore, David Rosner’s article “Epidemics”, which covers the West Nile Virus outbreak in New York City, spells out how important it was to have a program that “tried to find a balance between sounding the alarm and preventing panic, between giving citizens a sense of personal control over the threat and demonstrating that officials are taking public action to address the crisis.”

It is extremely important to pre-designate a primary spokesperson and to use press conferences and public service announcements, to apprise citizens of the dangers of the agent/disease, and to urge personal vigilance in avoiding public gatherings if this is a communicable disease.

Effective communication through the news media will be essential to limit terrorists’ ability to induce panic and disrupt daily life. Rumors will fill the information gap until they are dispelled. It is recommended that the public be informed as to number of cases, size and location of outbreak, travel bulletins, instruction, and recommendations.

POINT A – CURRENT RESOURCES

1. Hospital Mutual Aid Radio System (H-MARS). Several years ago the District of Columbia Hospital Association (DCHA) created H-MARS. This system links 17 of its 18 member hospitals (including Malcolm Grow Medical Center at Andrews Air Force Base and the National Naval Medical Center) through the installation and operation of a hard-wired radio located in each hospital’s emergency departments. This system provides a communications line devoted exclusively to enabling all hospitals to communicate with one another as well as with DCHA leaders, the District of Columbia Fire Department (including EMS), the DC Mayor’s Office and the DC Emergency Management Agency.

To ensure that H-MARS is functioning correctly, an unannounced daily check of the system is made. Each hospital is responsible for radio maintenance and for ensuring that a trained individual capable of operating the system is available on every shift. H-MARS has proven to be an extremely valuable tool in emergency medical events as evidenced most recently, in supporting the response to a fire in the DC Metro system. Funding was recently received from USPHS/OEP to upgrade H-MARS to a regional radio system for the national capital region (NCRRS). Hopefully, this will lead to the integration of

Maryland and Virginia hospitals and fire departments in the national capital region, and create a link to the Metropolitan Medical Response System.

2. Capital Wireless Integrated Network (Cap-WIN). This is a partnership between the States of Maryland and Virginia and the District of Columbia to develop an integrated transportation and criminal justice information wireless network. This unique project will be the first multi-state transportation and public safety integrated wireless network in the United States. Potential uses include providing better, more timely information that is needed to make critical decisions involving the safety of the public, providing more effective and efficient multi-agency operations for dealing with major events, and providing on-scene access to national databases with critical information.

3. Metropolitan Washington Council of Governments Mutual Aid Radio System (COGMARS). This provides a multiple (11) channel conventional 800 MHz frequency mutual aid radio communications system, allowing interoperability within 800 MHz systems or interfacing with Low Band, VHF, and/or UHF systems. This system facilitates the use of command and control of personnel, units, and public safety agencies from various COG jurisdictions, including the Federal Government, District of Columbia, State of Maryland, and the Commonwealth of Virginia, that are working in concert to coordinate the mitigation of public safety events. Public Safety is defined by the Federal Communications Committee as consisting of these agencies: Fire-Rescue, Law Enforcement, Highway Maintenance, Local Government, Forestry Conservation, and Special Emergency Radio Services, which includes Emergency Medical Services, Health Care facilities (hospitals), and Emergency Management Agencies.

4. Reverse 911. Arlington County public safety dispatch has a “reverse 911” system which, during an emergency, can be programmed to dial 48 simultaneous numbers automatically and to deliver a recorded message. Messages can be targeted to a specific zip code or geographic location using a GIS component.

5. Radio Emergency Associated Communications Teams (REACT). This is a public service organization comprised of private radio operators who serve travelers and their communities alike with radio communications. Member volunteers are dedicating to improving their communities by providing voluntary, two-way communications.

Purposes of REACT include the following issues:

- The correct usage of CB Emergency Channel 9.
- Using their radios in the interest of public safety. Many teams monitor Citizens Band [CB] Radio Emergency Channel 9. Many also use radios called General Mobile Radio Service (GMRS) and have access to local GMRS Repeaters, generally on the 462.675 MHz frequency. Some teams have more than one repeater or may be on different frequencies.
- Developing the skilled use of the CB Radio Service, GMRS (UHF), BBS, cellular, and other radio services as additional sources of communications in emergencies.
- Coordinating efforts with other emergency organizations including police, FEMA, NOAA, RACES, ARES, NOVAD, the Salvation Army, and the American Red Cross.

- Providing public service communications for travelers and their local communities.

6. Radio Amateur Civil Emergency Service (RACES). Founded in 1952, this public service provides a reserve communications group within government agencies in times of extraordinary need. During periods of activation, RACES personnel are called upon to perform many tasks for the government agencies they serve. Although the exact nature of each activation will be different, the common thread is communications.

The Federal Communications Commission (FCC) is responsible for the regulation of RACES operations. The local, county, or state civil defense agency responsible for disaster services administers each RACES group. This civil defense agency is typically an emergency services or emergency management organization, sometimes within another agency such as police or fire. In some areas, RACES may be part of an agency's Auxiliary Communications Service (ACS). Some RACES groups call themselves by other names (often to avoid confusion with similarly sounding terms such as "racist" or "horse races"), such as ACS, DCS (Disaster Communications Service), or ECS (Emergency Communications Service). The Federal Emergency Management Agency (FEMA) provides planning guidance, technical assistance, and funding for establishing a RACES organization at the state and local government level.

7. National Warning System (NAWAS) Emergency Preparedness Network – Washington Area Communications Segment (WACS). The Washington Area Communications Circuit is a telephone network operated by the DC Emergency Management Agency, which provides for the dissemination of disaster warning information to the participating agencies in the Washington metropolitan area. This Circuit allows all participating agencies to receive information at the same time.

All transmission will be by voice and will be heard by all locations connected to the circuit. Strict control of the Circuit is necessary to ensure the immediate availability of NAWAS for emergency operations. Warning points/control points will continuously monitor the Circuit and, when necessary, take immediate action to stop unauthorized use of the Circuit. Normally the Circuit is restricted to emergency messages, tests, exercises, and necessary checking and reporting of Circuit malfunctions and equipment conditions.

Under established priority, the Attack Warning will be given priority over all other traffic by users of NAWAS/WACS. The Washington Control Point will exercise control of priorities within its jurisdictions when they do not conflict with national priorities.

All NAWAS/WACS communications are oral and transmissions are classified as privileged communications under provision of Section 605 of the Federal Communications Act of 1934 as amended, and rules and regulations promulgated there under.

Tests of the NAWAS will be conducted three times daily at times scheduled by the Chief of the Federal Emergency Management Agency Operations (FEMA/OPS) Center. All warning points will receive the initial ring and hear the inter-warning center

announcement. The District of Columbia Warning/Control Point will acknowledge when requested to do so by the FEMA/OPS center or the Regional Warning Center.

Participating agencies are: Alexandria Fire and Police, Andrews Air Force Base, Arlington Police and Fire, Bolling Air Force Base, Capitol Police, DC Fire & EMS, DC Hospital Coordination Center, DC Police, Dept. of Defense Police, VA Medical Center, Dulles Airport, Fairfax County Public Service Communications Center, Fairfax City Police, Falls Church Police, FBI, Fort Belvoir, Federal Protective Service, GSA, Lorton Central, Loudon County Fire and Sheriff, Maryland State Police Headquarters, Maryland State Police Forrestville, Military District of Washington, Metro Transit, Montgomery County Police, NASA Goddard, Naval District of Washington, NIH, NIST, National Weather Service, Oak Hill, Patuxent Institution, Prince George's County Fire and Police, Prince William County Fire, Reagan National Airport, Secret Service, Smithsonian, State Department, U.S. Marshals, U.S. Park Police, VDOT, Virginia State EOC, Virginia State Police, White House OPS Center, Alexandria Emergency Management, Fairfax County Emergency Management, HHS, MDOT District 3, Maryland State Emergency Management, Montgomery County Emergency Management, OPM, Prince George's County OEP, Prince William County Emergency Management, Montgomery County Fire & Rescue.

POINT B – Future Enhancements

1. A state of the art communications system to support disease surveillance to include these features:
 - Rapid notification and information exchange regarding disease outbreaks
 - Dissemination of diagnostic results and emergency health information
2. Coordination should include all levels of emergency response activities: local, state, and federal.
3. The following should be accomplished:
 - Develop methods to educate and inform the public
 - Establish separate toll-free hot lines and Internet access for healthcare practitioners and the public
 - Develop prepared multi-lingual fact sheets on biological agents
4. Involve the public in planning efforts and work with civic organizations.
5. Expand the capability of “Reverse 911” to handle more calls simultaneously and expand the system to other national capital region jurisdictions.

N. Annex: Mass Fatality Management Implementation

The following assumptions are made with regard to mass fatality management for a bioevent:

- Hospital and municipal mortuaries have limited resources for conducting mass fatality operations, including administration, autopsies, and storage of corpses.
- Mutual aid resources and federal assets will be needed to support local medical examiner activities.
- Most victims will have sought medical care before dying.
- Most victims will have been tentatively identified before dying.
- The following fatality issues should be considered as the situation evolves:
 - Region-wide casualty counts
 - Region-wide fatality counts
 - Possible primary and alternate pathogen(s) based on general information being received from medical facilities and hospitals
 - Contiguousness of the pathogen
 - Locations/facilities that will be used as Alternative Mortuary Facilities (AMFs)
 - Staffing for AMFs
 - Need for medical examiner resources, including personnel and materiel
 - Request for federal support

Once the decision to implement the mass fatality management plan has been made, the Office of the Chief Medical Examiner (OCME) should be responsible for these issues:

- Identifying and designing a morgue area, as required
- Maintaining security of bodies and personnel effects
- Covering, tagging, and protecting bodies prior to transport to the morgue
- Coordinating the removal of bodies from other areas to the morgue area
- Performing tasks to insure accurate certification of death

O. Annex: Medical Examiner Expansion Program (MEEP) Operations

Local medical examiners will establish and sustain operations of primary medical examiner facilities in the early stages of a bioevent. While the burden on already-taxed medical examiner offices is recognized, the sustained operation is necessary in order to process large numbers of anticipated fatalities as well as to create the infrastructure necessary for the integration of mutual-aid, state, and federal assets.

The Medical Examiner Expansion Program (MEEP) will need to expand as the crisis evolves and medical examiner facilities become overwhelmed. This should include internal expansion and augmentation of mortuary facilities and capabilities as well as the establishment and integration of the Alternative Mortuary Facilities (AMFs). Medical examiner augmentation is further accomplished by the request for and integration of federal assets. Requirements should be communicated and coordinated with Federal HHS, through ESF-8 in the appropriate State EOCs, and with FEMA, to set up, staff, and operate fatality management activities. Federal resources, which may be requested at the direction of the emergency management agencies, include the following assets:

1. **Disaster Mortuary Operational Response Team(s) (DMORTs).** DMORTs can augment staff in overwhelmed hospitals, municipal mortuaries, and medical examiner offices and may also establish freestanding medical examiner operations, albeit in direct coordination and cooperation with the local medical examiner office, as part of the overall MEEP.
2. **Other medical assets.** These may include other assets tasked under ESF-8 (through HHS) such as DoD mortuary assets, Veterans Administration, and others.

ESF-#8 (Health and Medical) will coordinate with all medical examiner offices in the region to acquire and field mortuary transport vehicles to support transport activities. Based on the numbers of fatalities, a large amount of transport vehicles may be needed. Communications with all transport assets should be coordinated through their primary dispatch centers. Where this is unavailable, such as with some private funeral directors' vehicles, RACES (an amateur radio station licensed to an emergency management agency) personnel or other communications personnel (i.e., National Guard, REACT) can be assigned to accompany the vehicles. Other resources that may be accessed for this task include medical examiner transport vehicles from outlying areas, National Guard and DoD assets, General Service Administration vehicles, and commercial vehicles. Funeral director associations should also be asked to contribute vehicles and personnel.

The medical examiner's office having jurisdiction, as well as other NCR medical examiner offices as needed, will need to provide resources such as carry devices, stretchers, and personal protection, including gloves and masks. Funeral directors and funeral director associations will be asked to contribute resources.

Ideally, deceased persons should be transported to a central location that will be the point of access for patient data entry into a tracking system for case management and where the body will be stored, usually in refrigeration at 34-37°F, until processing is possible. Documents indicating the medical history of the patient, if the patient was transported from a medical care facility, or scene of death information if the body is found dead at some other location may accompany the body. Bodies will be identified, clothing and property inventoried, evidence or biological specimens collected, and the cause and manner of death determined.

Hospitals, medical examiner offices, and AMFs will track victims. Tracking should include, at the very least, name, address, sex, date of birth, cause of death (actual or assumed), social security number, medical examiner of record, and relevant ME facility. Tracking of fatalities is critical to ensure that the whereabouts and cause of death is properly recorded, to ensure that law enforcement officials have access to bodies and records for follow-on investigation, and to ensure that families and friends of the deceased can be notified.

The medical examiner having jurisdiction will receive all death notifications at their central office/communications center. The Chief Medical Examiner will establish a uniform cause of death. Surviving family should be made aware that the identification process might take a minimum of 3 to 4 days, particularly if casualty numbers are extremely high.

An autopsy of each deceased person may not be performed for events that result in several thousand fatalities but can be accomplished, if desirable, with supplemental resources and staff for fatalities that number several hundred. U.S. Department of Health and Human Services (DHHS) Disaster Mortuary Teams (DMORTS) may be used to augment local ME activities. Since a terrorist event implies that the deaths are homicidal in nature, the decision by the Chief Medical Examiner to limit post mortem procedures to external examinations should be coordinated with both local and federal law enforcement agencies.

Disposition of bodies should be according to the number of victims, the pathogen involved, and facilities available. Burial is the preferred method if it can be accomplished in a timely manner and there is no threat to the public health. In extreme, catastrophic incidents, where overwhelming numbers of fatalities exist, it may be necessary to perform mass burials. In general, there is a very limited capability to perform cremation en masse. However, for certain biological agents, this may be the safest permanent disposition. It may be necessary to incinerate bodies en masse if the agent is transmissible and body counts are very high. The decision to deny release of the body to the next-of-kin should be supported by governmental officials in order to gain public acceptance over the anticipated objection of family members, who should be provided a death certificate signed by the Chief Medical Examiner. It is extremely important to accommodate religious preferences for burial *where possible*.

A representative from OCME should oversee the establishment of a family assistance center (FAC), staffed by trained disaster and crisis counselors, to assist grieving family

members. It is critical that an FAC be located away from the incident scene and that security is provided by local law enforcement so as to shield the families from the media. A public information officer, designated by the Chief Medical Examiner, should provide briefings to family members at regular intervals.

Both the NCR planning guidance and the current state plans are based on the National Association of Medical Examiners' (NAME) Multiple Facility Incident Plan (MFIP), March 2000.

POINT A – CURRENT RESOURCES

1. Disaster Mortuary Operational Response Team (DMORT). The Federal Response Plan tasks the National Disaster Medical System (NDMS) under Emergency Support Function 8 (ESF-8) to provide victim identification and mortuary services. These responsibilities include the following:

- Temporary morgue facilities
- Victim identification
- Forensic dental pathology
- Forensic anthropology methods
- Processing
- Preparation
- Disposition of remains

In order to accomplish this mission, NDMS entered into a Memorandum of Understanding with the National Association for Search and Rescue (NASAR), a nonprofit organization, to develop Disaster Mortuary Operational Response Teams (DMORTs). DMORTs are composed of private citizens, each with a particular field of expertise, who are called upon in the event of a disaster. DMORT members are required to maintain appropriate certifications and licensure within their discipline. When members are activated, all States recognize licensure and certification, and the Federal Government as a temporary federal employee compensates the team members for their duty time.

During an emergency response, DMORTs work under the guidance of local authorities by providing technical assistance and personnel to recover, identify, and process deceased victims.

The DMORTs are directed by the National Disaster Medical System in conjunction with a Regional Coordinator in each of the ten federal regions. Teams are composed of Funeral Directors, Medical Examiners, Coroners, Pathologists, Forensic Anthropologists, Medical Records Technicians and Transcribers, Fingerprint Specialists, Forensic Odontologists, Dental Assistants, X-ray Technicians, Mental Health Specialists, Computer Professionals, Administrative Support Staff, and Security and Investigative Personnel.

The Department of Health and Human Services (HHS)/United States Public Health Service (USPHS) Office of Emergency Preparedness (OEP)/National Disaster Medical System (NDMS), in support of the DMORT program, maintains a Disaster Portable Morgue Unit (DPMU) at the OEP warehouse located in Rockville, Maryland. The DPMU is a depository of equipment and supplies for deployment to a disaster site. It contains a complete morgue, with designated workstations for each processing element, and prepackaged equipment and supplies.

2. Disaster Assistance Recovery Team (DART). DART responds to the scene of mass fatality incidents to assist in recovering and removing the bodies of the deceased. The team is made up of civilian and/or sworn law enforcement personnel who are specially trained in the recovery of the deceased and the collection of certain types of evidence from the scene of a mass fatality incident. This provides safe, effective, and humanitarian recovery of the deceased in the metropolitan Washington area.

POINT B – ENHANCED CAPABILITY

1. A Memorandum of Understanding should also be established with Dover Air Force Base (Dover, DE), which is able to receive 10,000 casualties. They have large numbers of caskets and portable x-ray equipment.
2. Establish a Memorandum of Understanding with the Armed Forces Institute of Pathology (AFIP) at Walter Reed Army Medical Center (WRAMC) to use their forensic pathologists, mortuary assistants, and embalmers.
3. Provide OCMs with specific detailed information tailored towards mass fatality management resulting from biological WMD regarding decontamination isolation, and antibiotic prophylaxis for incorporation into their response plans.
4. Identify resources at the federal level that can be included in the individual state response plans. This includes what can be provided, when it is available, and who should be contacted and by what method for mobilization.
5. Finally, ensure the experiences gained in the planning process are shared among the three state OCMs through groups such as the Mass Fatality Working Group, which can produce formal MOUs or mutual aid compacts for mass fatality management. These forums will identify other gaps to which solutions must be found as the planning process proceeds.

P. Annex: Environmental Surety

Once the immediate bioevent has terminated, measures should be taken to ensure the safety of the resident population. The measures may include sampling the environment in which the event has taken place (as appropriate by agent), designing control measures, and communicating these control measures to the population. Surety measures should be based on the specific agent, which will have been identified in earlier stages of the incident response. Suggested agent-specific guidance is listed below.

1. Anthrax

- **Exposure and sampling.** Anthrax used in a bioterrorist incident would likely be dispersed as an aerosol, exposing large areas of soil and vegetation to anthrax spores. Although the spores can persist for decades, it is extremely difficult to create a secondary aerosol because of strong adhesive forces between the infectious particle and the surface area on which it rests. Therefore, the danger of direct infection to humans is relatively minor. Samples should be obtained, however, to fully understand the spatial extent and concentration of spores. During this sampling, personnel should wear protective masks capable of blocking inhalation of the spores. It may also be dispersed as a food- or water-borne agent producing gastrointestinal effects.
- **Animal exposure and treatment.** There are no gross physical signs evident to the casual observer that an animal is infected with anthrax. Near the terminal stages of the disease, hemorrhages from the mouth, nose, and anus would be suggestive of anthrax. All exposed animals, whether or not they appear to be infected or have high temperatures, should be isolated and given antibiotics and vaccinations. Infected and exposed animals should be in a separate location from non-exposed animals and should be given long-acting antibiotics immediately. High dosages of antibiotics (50 ml of long-acting penicillin; 300,000 IU/ml) are recommended. Such antibiotic therapy can stop anthrax intoxication if given early. Infected or exposed cattle should be vaccinated as soon as possible using Thraxol® (Miles Laboratories) or Anthrax Spore Vaccine® (Colorado Serum). The vaccine provides protective immunity starting 3 to 5 days after vaccination. A booster vaccination should be given according to label directions. Antibiotic therapy can prevent death until the vaccine can provide immunity. There are no currently approved vaccines for domestic animals other than cattle.
- **Disposal of dead animals.** If anthrax is suspected or confirmed in an animal carcass, the animal should not be moved. This will aid in preventing contamination of the surrounding area. Bury the carcass deep in the ground and cover the carcass with anhydrous calcium oxide (quicklime). Decontaminate the soil with 5% lye and quicklime. Some have advocated incineration; however, a concern of incineration is that during the process, the smoke produced may aerosolize some of the anthrax before the agent is killed and create an airborne threat. It is theoretically possible for flies and biting insects to transmit the disease, but this has not been documented and is unlikely. There is a low probability of transmission to humans under normal circumstances.

- **Vector control.** There are no arthropod vectors associated with anthrax; therefore, no control measures are indicated.
- **Decontamination.** In areas of heavy contamination, decontamination should be considered. Decontamination methods for all types of bacterial agents include burning the area or spraying the area with a mixture of bleach and water. Spraying water or oil on the area helps prevent secondary aerosol exposure but does not decontaminate the bacteria. Anthrax spores are highly resistant to decontamination. Any commercial hypochlorite (bleach) product can be used to produce a decontaminant that will rapidly kill all potential biological threat agents, including *Bacillus anthracis* spores. Chlorine dosages sufficient to rapidly kill anthrax spores would kill other microorganisms even faster. Sodium hypochlorite, formaldehyde, and phenol are also effective sporicidal decontaminants. These chemicals are caustic and corrosive, in addition to being toxic and offensive to humans and animals. A new commercial sporicidal product, Exspor, has been found to be less corrosive than hypochlorite bleach, not caustic, and generally harmless to humans; however, inhalation of the aerosolized vapor during decontamination may result in breathing difficulties due to the acidity of the solution. Except for emergency response operations, steps must be taken to capture the runoff produced by the decontaminant. Failure to capture the runoff may constitute illegal release of a hazardous substance under federal, state or district laws and regulations. The danger of anthrax to animals, both domestic and wild, will continue to exist as long as there are significant spores in the environment.
- **Building assessment.** Building ventilation systems in direct line of any aerosol release of anthrax spores may be contaminated and require decontamination. The building must first be assessed to determine if any anthrax spores are present. Then, if spores are found, the level of decontamination must be determined. It is generally believed that re-aerosolization of sufficient spores to infect humans is very unlikely. Irrespective of the effectiveness of the decontamination, the public may not accept rehabilitation of the building. There is very little danger of anthrax contamination in buildings used to diagnose or treat anthrax patients. Normal hospital infection control techniques will adequately deal with any potential building contamination.

2. Brucellosis

- **Exposure and sampling.** Brucellosis used in a bioterrorist incident would likely be dispersed as an aerosol, exposing large areas of soil and vegetation to the organism. An alternative mode of attack would be the deliberate contamination of food products, probably dairy products. Brucellosis is normally transmitted by contact with tissues, blood, urine, vaginal discharges, aborted fetuses and especially placentas through breaks in the skin or by ingestion of dairy products. Furthermore, the bacteria are relatively fragile in the environment and will not survive for long periods of time. Therefore, environmental sampling is not indicated.
- **Animal exposure and treatment.** Animals in the affected area should be tested for the presence of brucellosis. Infected animals exhibit no obvious signs of the infection to the casual observer. Antibiotics can be used to treat infected animals, but the treatment is frequently not effective and the animal remains a carrier of the disease. As a result, infected animals should be destroyed and their carcasses properly disposed of.
- **Disposal of dead animals.** Dead or dying animals pose little threat to humans as long as strict sanitation procedures are followed, such as wearing gloves (latex or nitrile) when handling the carcasses, thoroughly washing hands, and disinfecting contaminated areas. As stated above, the primary means of transmission are contact with bodily fluids or consumption of contaminated tissue. Therefore, dead animals must be dealt with prior to rehabilitating an area. Carcasses should be collected and incinerated. If incineration is not feasible, they should be buried and covered with quick lime.
- **Vector control.** There are no arthropod or insect vectors associated with brucellosis; therefore, no control measures are indicated.
- **Decontamination.** Due to the frailty of the bacteria, only local decontamination at the site of animal carcasses is indicated. As previously stated, bodily fluids are the primary contaminants from dead or dying animals. Any disinfectant can be used, but quick lime is probably the most convenient.
- **Building assessment.** There are no concerns, beyond those associated with dead or dying animals, in rehabilitation of housing. Standard hospital infection control techniques will deal with any contamination introduced in treatment and housing of infected humans.
- **Public information.** An aggressive public information program is essential to ensure that no raw or undercooked meat nor any unpasteurized dairy products from potentially infected animals is consumed. This is especially important for any wild animals that may be part of the returning residents' diets because of the decreased ability to monitor the health of wildlife.

3. Plague

- **Exposure and sampling.** Plague used in a biological attack would likely be dispersed as an aerosol. An aerosol attack also would infect rodents, and they would subsequently become carriers of the disease. An alternate attack mechanism would be to release large numbers of infected fleas to establish a reservoir in rodents and other hosts. Classic environmental sampling of media (air, water, and soil) is not indicated. Capture and sampling of rodents and fleas should be carried out to determine if the attack has created a reservoir for the disease.
- **Animal exposure.** Animals infected with bubonic plague often show an obvious “bubo” (swollen lymph node, often draining pus). Carrier animals, or those dying from acute pneumonic plague, may show no overt signs of infection. Therefore, it is important to test mammalian species. Although over 200 mammalian species have been reported to have the natural form of the disease, rodents, particularly rats, are the natural reservoir for the disease.
- **Disposal of dead animals.** There is a direct danger to humans from dead and dying animals. Infected fleas on the carcasses can bite and subsequently infect humans or other animals. Carcasses should be handled with strict sanitary precautions (gloves, hand washing, etc.) and incinerated as soon as possible. Fleas should be prevented from leaving the host animal and infesting a bystander. This can be accomplished by using an insecticide to kill the fleas.
- **Vector control.** If the disease is found to be present in the local rodent/flea populations, aggressive rodent and flea control measures should be undertaken. This, coupled with an aggressive public health monitoring program, are essential to keeping the subsequent disease incidence under control.
- **Decontamination.** Basic sanitation is the only concern in buildings. That, coupled with the aggressive rodent control measures, will minimize the likelihood of subsequent infections.
- **Public information.** As stated earlier, a forceful public information program that stresses the need for sanitation and rodent/flea control measures will help to keep the subsequent infections to a minimum.

4. Smallpox

- **Exposure and sampling.** Smallpox will not have any significant environmental consequences.
- Animal exposure/disposal of dead animals/vector control. There are no animal hosts for smallpox.
- **Decontamination.** Natural weathering in the environment will virtually eliminate any hazard after 1 or 2 days.
- **Building assessment.** Standard hospital infection control measures will reduce the likelihood of further spread of the disease due to contamination in buildings.

5. Tularemia

- **Exposure and sampling.** Tularemia used in a bioterrorist incident would likely be dispersed as an aerosol, exposing both animals and humans to the agent. Both humans and animals can acquire the infection from inhalation. The organism can remain viable for weeks or months at low temperatures in water, soil, carcasses, and hides, and for years in frozen rabbit meat. Classical environmental sampling of media (air, soil, and water) is probably not justified. Although the infection can be acquired by ingestion of contaminated soil and water by animals and humans, the most common mode of transmission is through contact via skin abrasions and mucous membranes. To determine if tularemia has been established in the affected area, collecting and testing wild rabbits will yield an understanding of the extent of the disease in the environment. Arthropods, especially ticks, are another indicator of the extent of the disease in the animal population.
- **Human or animal exposure.** Visible evidence of the infection often depends on what clinical form of tularemia the animal possesses. In ulceroglandular tularemia, there is often a necrotic ulceration at the site of inoculation, often the extremities, due to the bite of an arthropod and swelling of regional lymph nodes. Infection is not visibly evident to the casual observer in the intestinal, pneumonic, and typhoidal forms of tularemia. If tularemia is found to be present in the wildlife population, domestic animals should be tested in the affected area for the disease.
- **Disposal of dead animals.** There is a direct danger to humans from dead and dying animals. Infected arthropods, especially ticks, that remain on the carcasses can bite and subsequently infect humans or other animals. Carcasses should be handled with strict sanitary precautions (gloves, hand washing, etc.) and buried or incinerated as soon as possible. Ticks should be prevented from leaving the host animal and infesting bystanders. This can be accomplished by using an insecticide to kill the ticks.
- **Vector control.** Aggressive control measures should be taken to eradicate ticks and other arthropods if the disease is found to be present in the wildlife population.
- **Decontamination.** Decontamination of affected areas is not indicated, although heat and disinfectants kill the bacteria rather easily. Natural aging should be sufficient to eliminate any contamination in the environment.

- **Building assessment.** There is no need to decontaminate buildings used for treatment or housing of infected patients beyond normal hospital infection control measures. There is no evidence to support acquisition of the disease through inhalation of dust.
- **Public information.** An aggressive public information campaign should be mounted to fully inform the public of the dangers associated with handling and consuming infected carcasses and the symptoms associated with arthropod bites from infected animals.

Q. Annex: Pandemic Influenza

One of the major differences between natural disasters and pandemic influenza is the likelihood of large-scale, geographically dispersed health effects. As is the case with bioterrorism, pandemic influenza has the potential to severely affect the population and cause immeasurable damage to daily life.

The following chart depicts a summary of the similarities and differences between pandemic influenza⁴ and bioterrorism

⁴ CDC Pandemic Influenza: A Planning Guide for State and Local Officials – Draft 2.1

ANNEX Q, FIGURE 1: PANDEMIC INFLUENZA AND BIOTERRORISM**A Summary of Similarities and Differences**

ISSUE	BIOTERRORISM	PANDEMIC INFLUENZA
Likelihood	High	High
Warning	None to days	Days to months
Occurrence	Focal or multifocal	Nationwide
Transmission/Duration of exposure	Point source/limited	Person-to-person/6-8 weeks
Casualties	Hundreds to thousands	Hundreds of thousands to millions
First responders susceptible?	Yes	Yes
Disaster Med Team support/response	Yes	No (too widespread)
Main site for preparedness, response, recovery, and mitigation	State and Local Areas	State and Local Areas
<i>Essential preparedness components</i>		
Surveillance	Yes	Yes
Law enforcement intelligence	Yes	No
Investigation	Yes	Yes
Research	Yes	Yes
Liability programs	No	Yes
Communication systems	Yes	Yes
Medical triage and treatment plans	Yes	Yes
Vaccine supply issues	Yes (for most likely threats)	Yes
Drug supply issues	Yes	Yes
Training/tabletop exercises	Yes	Yes
Maintenance of essential community services	Yes	Yes
ISSUE	BIOTERRORISM	PANDEMIC INFLUENZA
<i>Essential response components</i>		
Rapid deployment teams	Yes	No
Effective communications/media relations strategy	Yes	Yes
Vaccine delivery	Yes (for most)	Yes
Drug delivery	Yes (for some)	Yes
Hospital/public health coordination	Yes	Yes
Global assistance	Possibly	Yes
Medical care	Yes	Yes
Mental health support	Yes	Yes
Mortuary services	Yes	Yes
Supplies and equipment	Yes	Yes
<i>Essential mitigation components</i>		
Enhanced surveillance	Yes	Yes
Enhanced law enforcement intelligence	Yes	No
Vaccine stockpile	Yes (selected agents)	Prototype vaccines only
Drug stockpile	Yes	Yes
Pre-event vaccination	Vaccination of selected groups only	Vaccination of medically high-risk groups with pneumococcal vaccine

SECTION III, PLANNING CONSIDERATIONS FOR COG MEMBER JURISDICTIONS

A. Incident Management/Logistics

Planning Issues	Planning Details	Yes	No	Point of Contact
1. Capability to participate in a unified command structure to integrate and coordinate local assets with those of neighboring jurisdictions and regional, state and federal assets				
2. Emergency Management Agency (EMA) should plan to assume responsibility for coordinating the management of:	Patients (In conjunction with Health Department)			
	Staff and volunteers			
	Current supplies and resources			
	Requests for additional resources			
	Requests for mutual aid			
	Requests for state and federal aid			
	Access to National Pharmaceutical Stockpile			
	Access to National Disaster Medical System (NDMS), Disaster Medical Assistance Teams (DMATs), National Medical Response Team (NMRT) and Disaster Mortuary Operational Response Teams (DMORTs)			
3. Provide for regular interagency meetings, possibly "virtual"				
4. Consider establishing a local bioterrorism task force (BTF) to interact with the regional COG BTF				
5. EMA should create and maintain resource directories with appropriate Points of Contact (POC) for:	Critical steps/components of the plan			
	Obtaining neighboring jurisdictions' aid			
	Accessing regional, state, federal assets Subject Matter Experts (SME)			
6. Develop and maintain an inventory list of existing critical supplies such as ventilators and antibiotics and health care personnel				

Planning Issues	Planning Details	Yes	No	Point of Contact
7. EMA should plan to develop a crisis telephone hotline system during a large scale bioevent incident to handle public requests for information and to staff it with both EMA and public health personnel for:	Public health and safety issues			
	Locator Information			
8. Provide training to essential personnel on response to a large scale bioterrorist attack				
9. Exercise existing plans for response to biological incident on a regular basis (integrate with regional exercises)				
10. Develop a system of after action reports (AAR) and use these to improve the response and readjust plans to reflect these changes				
11. Designate staging areas for equipment and personnel				
12. Designate landing sites for air traffic supplying materiel such as the National Pharmaceutical Stockpile				
13. Assume responsibility for dissemination of accurate information via print and electronic media to the public to include:	Efforts to reduce panic and stress using simple information and creating the impression of a calm, "in-control" government			
	Instructions to prevent spread of disease and personal decontamination			
	Signs, symptoms and possible risks			
	Locations to report to for medical care			
	Immunization/prophylaxis sites			

B. Medical and Public Health Surveillance

Planning Issues	Planning Details	Yes	No	Point of Contact
1. Creation of adequate lines of communication and collaboration among:	Local health agencies			
	Emergency Medical Services (EMS)			
	Medical Examiner's (ME) Office			
	Public Health Laboratory (PHL)			
	Environmental health department			
	Hospitals – infection control practitioners, infectious disease professionals, emergency departments, et al			
	Schools – school nurses, absenteeism both student and employees			
	Local veterinary practitioners			
	Zoological veterinary personnel			
	Poison control center			
	Police and fire/rescue			
	Other response organizations in the community			
	Animal control and local animal shelters			
2. Develop systems for quick detection of unusual disease occurrence	Use of Rapid Influenza Tests			
3. Consider use of symptoms and syndromes versus diagnosis-based analysis	Use of Bio agent tests when patients test negative to influenza test			
4. Identify and use current health department systems for reportable diseases to:	Facilitate lines of communication between health care providers and DOH			
	Coordinate epidemiological investigation			
	Coordinate transfer of specimens to PHL			
5. Establish baseline information and detect subsequent deviations in excess of a set percentage of the following:	Sentinel hospital urgent care and emergency room data			
	Sentinel pharmacy data on specific over the counter (OTC) and prescription medications			
	EMS dispatch data –review of 911 dispatch/calls			
	Reports of unusual deaths or clusters, and unusual out-of-hospital deaths by ME's office			

Planning Issues	Planning Details	Yes	No	Point of Contact
	Reports of communicable disease absent from the area for a lengthy period			
	A previously unseen disease occurring in the area			
	Unusual animal disease or deaths reported by veterinarians and/or animal control			
	School and government absenteeism to include law enforcement, fire and EMS			
6. Develop method to monitor key indicators				
7. Identify laboratories (other than public health lab) capable of timely diagnosis e.g. state health laboratory, Centers for Disease Control and Prevention (CDC), U.S. Army Medical Research Institute for Infectious Disease (USAMRIID)				
8. Ensure standard operating procedures (SOP) in place at DOH to:	Investigate reported cases by interviewing patients and providers			
	Establish case definitions			
	Plot epidemic curves, calculate possible disease rates and generate reports			
9. Consider use of geographic mapping systems such as ArcView to plot clusters of patients				
10. Determine potential for secondary transmission of identified disease				
11. Develop and maintain information sheets on specific agents for dissemination to:	First responders			
	Healthcare agencies and providers			
	The media			
	The public			
	Elected officials and government agencies			
12. Use of email, broadcast faxes, secure web-based systems, mass paging where available for dissemination of bi-directional information in time of crisis				
13. Provision of a 24/7-telephone number at the DOH to ensure timely reporting				

C. Mass Immunization and Prophylaxis

Planning Issues	Planning Details	Yes	No	Point of Contact
1. Develop plans to contain and control disease outbreak through immunization and/or prophylaxis				
2. Develop protocols for different agents: Communicable Non-communicable				
3. Create stockpiles of durable items such as syringes, gloves, alcohol preps, and sharps containers				
4. Maintain documentation on how to access local, regional, state, and federal medication resources				
5. Develop memoranda of understanding (MOU) with pharmacies, local drug manufacturers or sales representatives for provision of antibiotics				
6. Develop a plan to establish mass immunization sites or prophylaxis distribution sites:	Schools			
	Churches			
	Community centers			
	Shopping centers			
	Local government buildings			
7. Consider door-to-door mass immunization or distribution of prophylaxis programs and designate personnel resources to complete this task – (will need MOUs to accomplish this)				
8. Ensure provision of site security for these sites and medication repositories, and for movement of stocks from storage sites to immunization sites				
9. Develop simple record keeping and follow-up procedures for use during an incident				

Planning Issues	Planning Details	Yes	No	Point of Contact
10. Develop MOUs with non-clinical volunteers such as retirees, social clubs, associations, etc. to provide clerical support personnel for registration and logistics such as obtaining signed consent to maintain medical personnel requirements at a bare minimum				
11. Establish secure storage sites for warehousing supplies and maintaining refrigeration of medications during transport as needed e.g.:	Furrier cold storage facilities			
	Meat and food freezers at grocery stores			
	Ice rinks			
	Railroad refrigeration cars			
	Grocery distribution trucks with refrigeration			
12. Develop a plan to immunize and/or prophylax health care workers and their families in a prioritized fashion to ensure high staffing levels, and obtain consensus from:	Governmental leadership			
	Public health ethicists			
	Religious leaders			
13. Create a distribution plan for National Pharmaceutical assets and appoint the individual responsible for oversight management				
14. Consider establishing a local pharmaceutical cache to provide prophylaxis and treatment for responders prior to arrival of NPS "push package"				
"15. Coordinate with local veterinarians to use their stocks of drugs e.g. Atropine.				

D. Mass Patient Care

Planning Issues	Planning Details	Yes	No	Point of Contact
1. Create a plan for rapid expansion of the existing health care system				
2. Consider the following:	Increase of hospital beds in existing hospitals by opening unused areas			
	Contact NDMS and request DMAT support early in incident			
	Increased staffing via call-back protocols			
	Mutual aid agreements with bordering jurisdictions			
	Use of alternate care facilities as described in annex on mass patient care			
	Integration of local volunteer organizations			
	Use of beds in skilled nursing facilities, urgent care and clinics, endoscopy suites, closed hospitals, etc			
	Integration of military treatment facilities into local planning efforts			
	Cancellation of elective surgeries and non-emergency procedures			
	Consider early discharges or relocating patients to distant or mutual aid hospitals			
	Consider discussion with local hotels to provide bed space for non-critical patients			
	Consider establishing a single hospital as the receiving hospital for biological patients if a communicable disease so as to isolate patients and prevent additional disease spread			
3. Research local legal implications of quarantine and isolation	Legal experts			
	Governmental leadership			
4. Design procedures for possible isolation and/or quarantine procedures				

Planning Issues	Planning Details	Yes	No	Point of Contact
5. Develop a plan and accompanying MOUs with appropriate organizations to utilize non-traditional staffing resources:	Volunteer or retired physicians, nurses, veterinarians, dentists			
	Nursing, medical, dental students from local universities or colleges			
	Teaching (non-clinical) faculty from medical, dental, nursing schools			
	Pharmacy and physician assistant students			
	Nurse practitioners and nurse anesthetist students			
	Laboratory technicians and phlebotomists			
	Administrative personnel with previous clinical experience			
6. Develop a procedure to credential responding personnel who must carry proof of licensure at all times				
7. Pre-designate casualty collection points which can provide limited (austere) treatment at schools, community centers, sports arenas (with adequate cover), armories, churches, etc.				
8. Integrate Red Cross support for family services, first aid (non biological) and food and shelter				
9. Develop treatment protocols, decontamination protocols and protocols for appropriate levels of personal protective equipment (PPE) needed for different biological agents and provide these to all healthcare providers				
10. Plan to shelter and feed domestic animals by working with:	Humane societies			
	Veterinarians			
11. Integrate psychological support and counseling resources for healthcare providers, exposed and potentially exposed individuals, and the general public into patient care protocols e.g.:	Critical Incident Stress Management (CISM)			
	Capital Area Crisis Response Team			
	Social workers, psychiatrists, psychologists and other mental health workers			
	Clergy			

E. Mass Fatality Management

Planning Issues	Planning Details	Yes	No	Point of Contact
1. Plan to establish temporary morgue facilities				
2. Ensure respectful disposition of the dead by integrating religious organizations into planning process and during actual event to consider issues:	Autopsy			
	Mass graves			
	Delay in burial			
	Cremation			
3. Increase morgue capacity by using:	Ice rinks			
	Cold storage facilities			
	Refrigerated trucks			
	Refrigerated railroad cars			
4. Develop protocols for:				
a. Victim identification using a unique sequential identifier by:	Locating personal identification information on victim such as driver's license, school or employee ID			
	Identification of deceased by family members where appropriate			
	Fingerprint identification by comparing with FBI, DMV or similar databases			
	Dental identification			
b. Autopsy procedures to include:	Number of autopsies as required by the FBI and considered practical considering numbers of fatalities			
	Maintaining collection and chain of evidence			
	Determining levels of PPE that will be required for different BT agents			
c. Decontamination of remains as deemed necessary and dependent on biological agent				
d. Mass burials or cremations				
e. Family notifications and provision of death certificates				
5. Develop a plan to establish a "Family Center" for relatives to receive information on loved ones and to obtain grief counseling as needed				

F. Environmental Surety and Recovery Phase

Planning Issues	Planning Details	Yes	No	Point of Contact
1. Identify requirements:	Determine approx. number of animals in the area			
	Use this data to determine types & quantity of veterinary medications needed			
	Estimate quantity of pesticide needed			
2. Establish central coordination and receiving area for additional local, state, and federal supplies and develop MOUs:	Ascertain existing supplies of animal antibiotics, vaccines, pesticides and PPE			
	Determine gaps			
	Develop MOUs with veterinary and pesticide suppliers, veterinary laboratories, federal facilities for additional supplies			
3. Establish sites for disposal of animal carcasses:	Identify facilities for burial or incineration			
	Consider soil type, distance to groundwater, proximity to surface water			
	Ensure availability of quick lime			
	Inventory list of heavy equipment			
4. Establish a cache of supplies and equipment:	Use gaps to determine amounts			
	Provide for rotating stocks			
	Ensure no leakage of pesticides, decontaminants			
5. Secure and train personnel to conduct environmental surety operations	Define required job skills			
	Coordinate with trade & professional organizations to solicit volunteers			
6. Establish plans to disseminate information	Hazards associated with biological agent			
7. Ensure ongoing psychological support available for health care providers and the public				

SECTION IV, REFERENCES

A. Biological Agents^{5,6}

Anthrax

Description of Agent: Anthrax is a highly lethal infection caused by infection with the Gram-positive bacterium, *Bacillus anthracis*. In naturally acquired cases, organisms usually gain entrance through skin wounds (causing a localized infection), but may be inhaled or ingested. Intentional release by belligerents or terrorist groups would presumably involve the aerosol route, as the spore form of the bacillus is quite stable and possess characteristics ideal for the generation of aerosols.

Signs and Symptoms: The incubation period for inhalational anthrax is 1-6 days. Fever, malaise, fatigue, cough, and mild chest discomfort are rapidly followed by severe respiratory distress with dyspnea, diaphoresis, stridor, and cyanosis. Shock and death occur within 24-36 hours of the onset of severe symptoms. In cases of cutaneous anthrax, a papule develops, then vesicates, finally developing into a black eschar surrounded by moderate to severe edema. The lesions are usually painless. Without treatment, the disease may progress to septicemia and death, with a case-fatality rate of 20%. With treatment, fatalities are rare.

Diagnosis: Physical findings are typically non-specific in inhalational cases, with initial complaints of malaise, fever, headache, and possibly substernal chest pain. A widened mediastinum is sometimes seen on x-ray late in the course of illness, and correlates with a pathologic finding of hemorrhagic mediastinitis, the "classic" presentation of inhalational anthrax. The bacterium may be detected by Gram stain of blood and by blood culture late in the course of illness.

Treatment: Although usually ineffective in inhalational cases once symptoms are present, antibiotic treatment with high-dose penicillin, ciprofloxacin, or doxycycline should nonetheless be administered. Although typically sensitive T2: HPBXL A to penicillin, resistant isolates are readily produced in the laboratory. For this reason, in the

⁵ The COG recommends member jurisdictions use the latest edition of the Medical Management of Biological Casualties Handbook, United States Army Medical Research Institute of Infectious Diseases (USAMRIID), as the standard reference for medical aspects of bioterrorism response planning, and the Control of Communicable Diseases Manual, 17th Edition, American Public Health Association (APHA), 2000, as the guide for treatment of civilian populations. The full text of USAMRIID's Medical Management of Biological Casualties Handbook, 4th Edition, February, 2001 is available on-line at the following URL:

<http://www.nbc-med.org/SiteContent/HomePage/WhatsNew/MedManual/Feb01/handbook.htm>

⁶ Except for Pandemic Influenza, agent information summaries were taken from: Biological Agent Information Papers, United States Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, Maryland. The complete listing of agents is available at the following URL:

<http://www.nbc-med.org/SiteContent/MedRef/OnlineRef/GovDocs/BioAgents.html>

case of an intentional release, and in the absence of antibiotic sensitivity data, treatment should be initiated with IV ciprofloxacin (400 mg q 8-12 hrs) or IV doxycycline (200 mg initially, followed by 100 mg q 12 hrs). Supportive therapy may be necessary.

Prophylaxis: A licensed vaccine is available for use in those at risk of exposure. Vaccination is undertaken at 0, 2, and 4 weeks (initial series), followed by booster doses at 6, 12, 18 months and then yearly. Oral ciprofloxacin (500 mg po bid) or doxycycline (100 mg po bid) is useful in cases of known or imminent exposure. Following confirmed exposure, all unimmunized individuals should receive three 0.5 ml SQ doses of vaccine over 30 days, while those vaccinated with < 3 doses prior to exposure should receive an immediate 0.5 ml booster. Anyone vaccinated with the initial 3-dose series in the previous 6 months does not require boosters. All exposed personnel should continue antibiotic therapy for 4 weeks. If vaccine is unavailable, antibiotics may be continued beyond 4 weeks and should be withdrawn only under medical supervision.

Decontamination and Isolation: Drainage and secretion precautions should be practiced. Anthrax is not known to be transmitted via the aerosol route from person to person. Following invasive procedures or autopsy, instruments and surfaces should be thoroughly disinfected with a sporicidal agent (high-level disinfectants such as iodine or 0.5% sodium hypochlorite).

Outbreak Control: Although anthrax spores may survive in the environment for many years, secondary aerosolization of such spores (such as by pedestrian movement or vehicular traffic) generally presents no problem for humans. The carcasses of animals dying in such an environment should be burned, and animals subsequently introduced into such an environment should be vaccinated. Meat, hides, and carcasses of animals in affected areas should not be consumed or handled by untrained and/or unvaccinated personnel.

Brucellosis

Description of Agents: Human Brucellosis is an infection caused by one of four species of Gram-negative coccobacilli of the genus *Brucella*. *B. abortus* is normally a pathogen of cattle, while *B. melitensis*, *B. suis*, and *B. canis* are pathogens of goats, pigs, and dogs, respectively. Organisms are acquired by humans via the oral route through the ingestion of unpasteurized milk and cheese, via inhalation of aerosols generated on farms and in slaughterhouses, or via inoculation of skin lesions in persons with close animal contact. Intentional exposure by belligerents would likely involve aerosolization but could involve contamination of foodstuffs.

Signs and Symptoms: The incubation period is quite variable, with symptoms often requiring months to appear; this marked variability would appear to temper somewhat the use of *Brucellae* as weapons. Symptoms of acute and subacute brucellosis are quite non-specific and consist of irregular fever, headache, profound weakness and fatigue, chills and sweating, and generalized arthralgias and myalgias. Depression and mental status changes are noteworthy. Osteoarticular complications, particularly involving the axial

skeleton (sacroiliitis, vertebral osteomyelitis) are common. Fatalities are uncommon, even in the absence of therapy.

Diagnosis: Naturally occurring cases may often be suspected based on a history of close animal contact or consumption of implicated foodstuffs. Brucellae may be isolated from standard blood cultures, but require a prolonged period of incubation; cultures should thus be maintained for six weeks if brucellosis is suspected. Bone marrow cultures yield the diagnosis in a higher percentage of cases than do peripheral blood cultures. A serum agglutination test is available and often helpful.

Treatment: Doxycycline (100 mg po bid) plus rifampin (600-900 mg po qd) administered for six weeks is the regimen of choice for uncomplicated brucellosis. Doxycycline + streptomycin, TMP/SMX + gentamicin, and ofloxacin + rifampin are acceptable alternative regimens.

Prophylaxis: Avoidance of unpasteurized milk products and appropriate veterinary vaccination practices are sufficient to prevent most naturally occurring brucellosis. Persons inadvertently exposed to veterinary vaccine strains of brucella have been successfully prophylaxed with doxycycline + rifampin for 10 days. No human brucellosis vaccine is available in the western world.

Decontamination and Isolation: Drainage and secretion precautions should be practiced in patients who have open skin lesions; otherwise no evidence of person-to-person transmission of brucellosis exists. Animal remains should be handled utilizing universal precautions and disposed of properly. Surfaces contaminated with brucella aerosols may be decontaminated by standard means (0.5% hypochlorite).

Outbreak Control: In the event of an intentional release of brucella organisms, it is possible that livestock will become infected. Thus, animal products in such an environment should be pasteurized, boiled, or thoroughly cooked prior to consumption. Proper treatment of water, by boiling or iodination, would also be important in an area subjected to intentional contamination with brucella aerosols.

Plague

Description of Agent: Plague is an infectious disease caused by the Gram-negative, bipolar-staining bacterium, Yersinia pestis. Naturally occurring plague is most often acquired by the bite of a flea that had previously fed on infected rodents. In such cases, plague classically presents as a localized abscess with secondary formation of very large, fluctuant regional lymph nodes known as buboes (bubonic plague). Plague may also be transmitted via aerosol and by inhalation of sputum droplets from coughing patients. In such instances, a primary pneumonic form may develop and, in the absence of prompt therapy, progress rapidly to death within 2-3 days. Intentional release by belligerents or terrorist groups would presumably involve aerosolization, but could also involve the release of infected fleas. Plague may be considered a lethal agent.

Signs and Symptoms: Pneumonic plague has an incubation period of 2-3 days, and begins with high fever, chills, headache, hemoptysis, and toxemia, progressing rapidly to dyspnea, stridor, and cyanosis. Death results from respiratory failure, circulatory collapse, and bleeding diatheses. Bubonic plague has an incubation period of 2 to 10 days, and presents with malaise, high fever, and tender lymph nodes (buboes). Bubonic plague may progress spontaneously to the septicemic form, with spread to the CNS, lungs, and elsewhere.

Diagnosis: To facilitate prompt therapy, plague must be suspected clinically. A presumptive diagnosis also may be made by Gram or Wayson stain of lymph node aspirates, sputum, or CSF. The plague bacillus may be readily cultured from aspirates of buboes or from the blood of septicemic patients.

Treatment: Early administration of antibiotics is quite effective, but must be started within 24 hours of onset of symptoms in pneumonic plague. The treatment of choice is streptomycin (30 mg/kg/day IM in 2 divided doses x 10 days) or gentamicin (2 mg/kg, then 1.0-1.5 mg/kg q 8 hrs x 10 days). Intravenous doxycycline (200 mg, then 100 mg q 12 hrs x 10-14 days) is also effective; chloramphenicol should be added in cases of plague meningitis. Supportive therapy for pneumonic and septicemic forms is typically required.

Prophylaxis: A licensed, killed vaccine is available. The primary vaccination series consists of a 1.0 ml IM dose initially, followed by 0.2 ml doses at 1-3 months and 3-6 months. Booster doses are given at 6, 12 and 18 months and then every 1-2 years. As this vaccine appears in animal experiments to offer no protection against aerosol exposure, victims of a suspected attack with aerosolized plague, or respiratory contacts of coughing patients, should be given doxycycline (100 mg po bid x 7 days or the duration of exposure, whichever is longer).

Decontamination and Isolation: Drainage and secretion precautions should be employed in managing patients with bubonic plague; such precautions should be maintained until the patient has received antibiotic therapy for 48 hours and has demonstrated a favorable response to such therapy. Care must be taken when handling or aspirating buboes to avoid aerosolizing infectious material. Strict isolation is necessary for patients with pneumonic plague.

Outbreak Control: In the event of the intentional release of plague into an area, it is possible that local fleas and rodents could become infected, thereby initiating a cycle of enzootic and endemic disease. Such a possibility would appear more likely in the face of a breakdown in public health measures (such as vector and rodent control) which might accompany armed conflict. Care should be taken to rid patients and contacts of fleas utilizing a suitable insecticide; flea and rodent control measures should be instituted in areas where plague cases have been reported.

Tularemia

Description of Agent: Tularemia is an infection caused by the Gram-negative coccobacillus, Francisella tularensis. Two biogroups are known; biogroup tularensis, also known as type A, is the more virulent form, and is endemic in much of North America. Naturally acquired tularemia is contracted through the bites of certain insects (notably ticks and deerflies), or via contact with infected rabbits, muskrats, and squirrels. Intentional release by belligerents would presumably involve aerosolization of living organisms. Although naturally acquired tularemia has a case-fatality rate of approximately 5%, the pneumonic form of the disease, which would predominate in the setting of intentional release, would likely have a greater mortality rate.

Signs and Symptoms: Naturally acquired tularemia frequently has an ulceroglandular presentation, although a significant minority of cases involve the typhoidal or pneumonic forms. The incubation period averages 3-5 days, but varies widely. Use of tularemia as a weapon would likely lead to a preponderance of pneumonic and typhoidal cases, and large aerosolized inocula would be expected to shorten the incubation period. Ulceroglandular disease involves a necrotic, tender ulcer at the site of inoculation, accompanied by tender, enlarged regional lymph nodes. Fever, chills, headache, and malaise often accompany these findings. Typhoidal and pneumonic forms often involve significant cough, abdominal pain, substernal discomfort, and prostration in addition to prolonged fever, chills, and headache.

Diagnosis: Prompt diagnosis relies on clinical suspicion. Routine laboratory tests are rarely helpful, and F. tularensis does not typically grow in standard blood cultures, although special media are available for the culturing (under BL-3 containment conditions) of blood, sputum, lymph node material, and wound exudates if the diagnosis is suspected. Serology is available to confirm the diagnosis in suspected cases.

Treatment: Streptomycin (7.5-15 mg/kg im q 12 hrs for 7-14 days) is the drug of choice for all forms of tularemia. Gentamicin (3-5 mg/kg/d (q 8-12 hrs for 7-14 days) is an acceptable alternative. Relapses are more common with tetracycline (500 mg po q 6 hrs for 14 days) therapy, although this alternative may be employed in patients who cannot tolerate aminoglycosides.

Prophylaxis: A live, attenuated vaccine is available as an investigational product through USAMRIID (Ft Detrick MD 21702). It may be given to those, such as laboratory workers, at high risk of exposure. A single dose is administered by scarification. Intramuscular streptomycin will prevent disease following documented exposure, but is not recommended following tick bites or animal contact.

Decontamination and Isolation: Tularemia is not transmitted person-to-person via the aerosol route, and infected persons should be managed with secretion and drainage precautions. Heat and common disinfectants (such as 0.5% hypochlorite) will kill F. tularensis organisms.

Outbreak Control: Following intentional release of *F. tularensis* in a given area, it is possible that local fauna, especially rabbits and squirrels, will acquire disease, setting up an enzootic mammal-arthropod cycle. Persons entering such an area should avoid skinning and eating meat from such animals. Water supplies and grain in such areas might likewise become contaminated, and should be boiled or cooked before consumption. Organisms contaminating soils are unlikely to survive for significant periods of time and present little hazard.

Variola (Smallpox)

Description of Agent: Smallpox is an infection caused by Variola virus, a species of Orthopoxvirus. Naturally occurring smallpox has been eradicated from the globe, with the last case occurring in Somalia in 1977. Repositories of virus are known to exist in only two laboratories worldwide. Monkeypox, Cowpox, and Vaccinia are closely related viruses that might lend themselves to genetic manipulation and the subsequent production of smallpox-like disease.

Signs and Symptoms: The incubation period of smallpox is about 12 days. Clinical manifestations begin acutely with a prodromal period involving malaise, fevers, rigors, vomiting, headache, and backache. After 2-4 days, skin lesions appear and progress uniformly from macules to papules to vesicles and pustules. Lesions progress centrifugally and scab in 1-2 weeks. In unvaccinated individuals, Variola Major, the classical form of the disease, is fatal in approximately 30% of cases.

Diagnosis: In its full-blown form as typically seen in unimmunized individuals, smallpox is readily diagnosed on clinical grounds. Differentiation from other vesicular exanthems such as varicella and erythema multiforme might be difficult, however, in cases of Variola Minor or in disease modified by prior vaccination. Electron microscopy can readily differentiate variola virus from varicella but not from vaccinia and monkeypox when performed on lesion scrapings. The virus can be grown in chorioallantoic membrane culture.

Treatment: Supportive care is the mainstay of smallpox therapy. No specific antiviral therapy exists.

Prophylaxis: A licensed, live Vaccinia Virus vaccine is available, and is administered via a bifurcated needle using a multiple puncture technique (scarification). Given the eradication of smallpox, vaccine would only be indicated in laboratory settings or where biological warfare was a distinct possibility. Vaccination is probably protective for at least 3 years. Exposed persons may be managed with prompt vaccination. Vaccinia Immune Globulin (VIG), given IM at a dose of 0.6 ml/kg, may prove a useful adjunct to vaccination, although its precise role is unclear.

Decontamination: Given the extreme public health implications of smallpox reintroduction, patients should be placed in strict isolation pending review by national health authorities. All material used in patient care or in contact with smallpox patients should be autoclaved, boiled, or burned.

Outbreak Control: Smallpox has considerable potential for person-to-person spread. Thus, all contacts of infectious cases should be quarantined for 16-17 days following exposure, and given prophylaxis as indicated. Animals are not susceptible to smallpox.

Influenza Pandemic⁷

Description of Agent: The Influenza type A virus is most often responsible for influenza epidemics and pandemics.

Signs and Symptoms: The incubation period for influenza is ~1-3 days. Symptoms include fever, headache, soreness, exhaustion, sneezing, watery eyes, mucus discharge from the nose, sore throat, and cough. Complications in a flu pandemic arise from viral and bacterial pneumonias, and severe illness and death can occur.

Diagnosis: Influenza (flu) pandemics are distinguished from the more common annual outbreaks of flu by the degree of difference in the genetic makeup of the virus. Although all flu viruses mutate very frequently, these mutations are usually in the form of a subtle drift. Individuals who have recovered from recent infections have partial immunity to new drifted viruses. A flu pandemic, however, is caused by a virus that has undergone a major shift in its genetic makeup. A pandemic virus has shifted so far away from its recent predecessors that most individuals in a population, even if they have recovered from the flu in their lifetime, have no immunity to this radically changed virus. Laboratory confirmation is made by isolation of influenza viruses from pharyngeal or nasal secretions or washings in cell culture or embryonated eggs, by direct identification of viral antigens in nasopharyngeal cells and fluids by FA test or ELISA, or by amplification of viral RNA [see the Control of Communicable Diseases Manual, 17th Edition, American Public Health Association (APHA), 2000].

Decontamination and Isolation: The influenza virus is very contagious, and infection can occur by breathing aerosol droplets from infected individuals, especially in enclosed areas such as planes and busses, or by direct contact with the virus on contaminated surfaces. Intentional release of influenza would likely be in the form of aerosolized droplets.

Prophylaxis: Immunization with a vaccine containing killed virus may provide 70-80% protection against infection in healthy young adults when the vaccine antigen closely

⁷ CDC Health Topics: Influenza, General Information. U.S. Centers for Disease Control and Prevention available on-line at the following URL: <http://www.cdc.gov/ncidod/diseases/flu/fluvirus.htm>

matches the circulating strains of influenza virus. Vaccination may also reduce the severity of the disease in older individuals. Caregivers and other contacts should be vaccinated appropriately and take droplet precautions.

Outbreak Control: Emphasis on basic personal hygiene (dangers in unprotected coughs and sneezes, and hand to mucous membrane transmission). Amantadine or rimantadine started within 48 hours of onset may be of value. See detailed guidance provided in the Control of Communicable Diseases Manual, 17th Edition, American Public Health Association (APHA), 2000.

B. Glossary of Terms and Acronyms

24/7	24 hours/day, seven days/week
ACS	Auxiliary Communications Service
AMC	Alternative Medical Center
AMF	Alternative Mortuary Facility
ARES	Amateur Radio Emergency Service
AVMA	American Veterinary Medical Association
ATSDR	Agency for Toxic Substances & Disease Registry
BL	Biosafety Level
BTF	Bioterrorism Task Force
BW-IRP	Biological Weapons Improved Response Program
BIOEVENT	A bioterrorist incident or a large-scale naturally occurring event such as pandemic influenza
CACRT	Capital Area Crisis Response Team
CAO	Chief Administrative Officer
CAPWIN	Capital Wireless Integrated Network
CB	Citizen Band
CCRF	Commissioned Corps Readiness Force
CDC	Centers for Disease Control and Prevention
CISM	Critical Incident Stress Management
COG	Metropolitan Washington Council of Governments
COGMARS	Metropolitan Washington Council of Governments Mutual Aid Radio System
DARPA	Defense Advanced Research Projects Agency
DART	Disaster Assistance Recovery Team
DCHA	District of Columbia Hospital Association
DCS	Disaster Communications Service
DHHS	Department of Health & Human Services
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operational Response Team
DMV	Department of Motor Vehicles
DoD-GEIS	Department of Defense – Global Emerging Infections System
DOH	Department of Health
DPMU	Disaster Portable Morgue Unit
EAS	Emergency Alert System
ECS	Emergency Communications Service
ED	Emergency Department
EMA	Emergency Management Agency
EMAC	Emergency Mutual Aid Compact
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
ENCOMPASS	Enhanced Consequence Management Planning and Support System
EOC	Emergency Operations Center
ESF	Emergency Support Function

ESSENCE	Electronic Surveillance System for the Early Notification of Community-based Epidemics
EWB	Electronic Watchboard
FAC	Family Assistance Center
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FRP	Federal Response Plan
GIS	Geographic Information Systems
GMRS	General Mobile Radio System
HazMat	Hazardous Materials
HEICS	Hospital Emergency Incident Command System
HEPA	High Efficiency Particulate
HMARS	Hospital Mutual Aid Radio System
ICD-9 Codes	International Classification of Diseases Codes
ICS	Incident Command System
ID	Identification
ILS	Influenza-like Syndrome
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
JIC	Joint Information Center
ME	Medical Examiner
MEEP	Medical Examiner Expansion Program
MFIP	Multiple Fatality Incident Plan
MMRS	Metropolitan Medical Response System
MMST	Metropolitan Medical Response Team
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MREP	Medical Response Expansion Program
MSCA	Military Support to Civilian Authorities
MTF	Military Treatment Facility
MWPHAC	Metropolitan Washington Public Health Assessment Center
NAME	National Association of Medical Examiners
NASAR	National Association for Search and Rescue
NBC	Nuclear, Biological, Chemical
NCR	national capital region
NCRRS	National Capital Region Radio System
NDMS	National Disaster Medical System
NG	National Guard
NMRI	Naval Medical Research Institute
NMRT	National Medical Response Team
NOAA	National Oceanic and Atmospheric Administration
NOVA	National Organization for Victim Assistance
NPS	National Pharmaceutical Stockpile
OCME	Office of the Chief Medical Examiner
OPTC	Outpatient Treatment Center
OTC	Over The Counter

PHL	Public Health Laboratory
POC	Point of Contact
POD	Point of Dispensing
PPE	Personal Protective Equipment
RACES	Radio Amateur Civil Emergency Services
REACT	Radio Emergency Associate Communications Teams
SADR	Standardized Ambulatory Data Record
SBCCOM	U.S. Army Soldier and Biological Chemical Command
SITREP	Situation Report
SME	Subject Matter Expert
SOP	Standard Operating Procedure
SPC	Sentinel Pharmaceutical Center
SVC	Sentinel Veterinarian Clinic
USAMRIID	U.S. Army Medical Research Institute for Infectious Diseases
USPHS/EOP	U.S. Public Health Service Office of Emergency Preparedness
VA	Veterans Affairs
VEE	Venezuelan Equine Encephalitis
VMAT	Veterinary Medical Assistance Team
VMI	Vendor Managed Inventory
WMD	Weapons of Mass Destruction
WMD-CST	Weapons of Mass Destruction Civil Support Team

C. References

Briefings made to Bio-Defense Steering Committee

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- Adm. (s) Steve Hart, Asst. Chief for Operational Medicine and Fleet Support, U.S. Navy Bureau of Medicine and Surgery and CAPT Vincent Musashe, Dep. Dir., Medical Resources, Plans and Policy Division, Chief of Naval Operations: “Naval Resources for a WMD Event.”
- LTC Xavier Stewart, Commander, 3rd Civil Support Team, Army National Guard, Ft. Indiantown Gap, Pennsylvania: “Communications Assets of the 3rd Civil Support Team.”
- Asha M. George, Dr PH, Director, Emergency Preparedness and Response, Association of Public Health Laboratories: “Where Does the Buck Stop – Covering the National Capital Region.”
- David Siegrist, Fellow, Potomac Institute: “Enhanced Consequence Management and Support System (ENCOMPASS).”
- Agnes, Stacia, MD, Department of Emergency Medicine, The George Washington University Medical Center: “Critical Care Bed Tracking System.”
- Jonathan Arden, MD, Office of the Chief Medical Examiner of the District of Columbia: “Medical Examiner Concerns.”
- Michael A. Stoto, PhD, The George Washington University School of Public Health and Health Services: “Surveillance Center Concept.”
- COL Jay Wright, National Guard Bureau Surgeon General’s Office: “Can Military TRICARE System Provide Early Warning.”
- MAJ Julie Pavlin, MD, MPH, Walter Reed Army Institute of Research, (DoD-GEIS): “Early Detection System for Bioterrorist and Natural Disease Threats Using Syndromic Surveillance in the Greater Washington, DC Area.”
- MAJ Brian Stewart, Armed Forces Inaugural Committee (AFIC): “Inauguration Events.”
- Dolores Derrington, Mitre Corporation: “Use of ENCOMPASS for Medical Surveillance During Inaugural Events.”

- James J. Hodge, Georgetown University Law School: “Isolation and Quarantine in an Era of Bioterrorism.”
- James “Smokey” Stanton, Maryland Institute of Emergency Medical Services (MIEMSS): “Maryland Health and Medical System Preparedness and Response Plan – Weapons of Mass Destruction.”
- Steven Charvat, Marasco Newton Group: “Results of Regional Hospital WMD Preparedness Survey.”
- “Lessons Learned from TOPOFF/NCR 2000.”
- “How and Where Do We Build Bridges to State Plans?”
- “Feedback from USPHS/OEP on the Plan.”

Workshops and Symposia Attended by Battelle and/or TriMed

- Mass Fatality Working Group
- BW-IRP/CDC Smallpox Workshop
- BW-IRP/NDPO Law Enforcement-Epidemiology Workshop
- BW-IRP Community Leaders’ Decision Tree Workshop
- Second Annual Johns Hopkins National Symposium on Medical and Public Health Response to Bioterrorism, November 28-29, 2000, Washington, DC
- USAMRIID Biological Warfare and Terrorism Medical Issues and Response Satellite Broadcast, September 26-27, 2000
- SBCCOM/USPHS/OEP Mass Prophylaxis Workshop, Arlington County, VA, January 11-12, 2001
- U.S. Army War College Strategy Conference
- Weapons of Mass Destruction Medic 2000
- Joint Workshop on Biological Response – State of Delaware and Dover Air Force Base
- CMI-Services Executive Inter-Operability Council Meeting
- Interagency Working Group on Communications, sponsored by FEMA
- Maryland Terrorism Forum Meeting
- 54th Presidential Inaugural Health and Medical Planning Committee Meetings

Review of Plans and Documents from Other Major Cities and/or Regions and Attendance at Planning Meetings

- New York City Mayor's Office of Emergency Management (New York, NY)
- South Western Pennsylvania Regional MMRS Planning Meeting (Pittsburgh, PA)
- Seattle, WA MMRS Bio-Response Plan
- San Diego County, CA MMRS Bio-Terrorism Response Plan
- State of Ohio Terrorism Annex

Documents (in addition to local plans included for reference on the compact disk version of this report)

DC Department of Health's CDC-funded comprehensive bioterrorism preparedness and response assessment

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Phil Perking and Myra Socher
31 August 2001

SECTION V, LOCAL PLANS

Outline of Existing Resources: Similarities and Differences

The purpose of the comparison chart that follows is to identify the existing resources, similarities, and differences between the medical response plans for biological weapons of mass destruction for the District of Columbia, State of Maryland, and Commonwealth of Virginia. Each of the three jurisdictions approached the planning task in a different way. The District of Columbia has a plan that approaches from specific Weapons of Mass Destruction–Biological Agents; Virginia has a Terrorism Consequence Plan; Maryland has a Response Plan for Weapons of Mass Destruction.

In addition to having unique titles for similar plans, each jurisdiction also organizes their plans differently. The District of Columbia and the Commonwealth of Virginia approach planning by assigning functional tasks to different agencies and giving little detail as to how each agency should carry out its functional task. The State of Maryland also assigns functional tasks to different agencies, although their plan goes into greater depth as to how each agency shall carry out its specific tasks. With the assumption that Virginia and the District of Columbia are leaving the details to the agencies to work out, it is not possible to compare the information without plans from each of the respective agencies; thus assigned functional tasks to different agencies with few specifics is the common denominator.

In order to present the data in a user-friendly manner, the functional areas are listed in the left-hand column and the states are listed in rows. The similarities/differences can easily be drawn by reading the document horizontally, starting with the functional areas and their subgroups to the far left.

Electronic copies of the plans are provided on the accompanying compact disk.

SECTION V, FIGURE 1: OUTLINED EXISTING RESOURCES, SIMILARITIES, AND DIFFERENCES

		MD	VA	DC	Maryland	Virginia	District of Columbia
Surveillance (Active & Passive)					S.D.1 / S.D. 2	A - 7, K - 10	1.16.2
	Responsible Agency (s)				Maryland Department of Health & Mental Hygiene	Department of Health	Department of Health, Bureau of Epidemiology
	Chain of Events	S.D 1 pg. 20	A-7.5	1.16.2 pg.5	Daily monitoring of reportable conditions, syndromes, and illnesses by the twenty three counties and Baltimore city public health departments; data shall be forwarded to, collated by and analysis performed at the statewide level by the Maryland Department of Health and Mental Hygiene	Conduct environmental/health monitoring as required	Daily data from hospital and medical provider – epidemiologic system supplies daily data to Bureau of Epidemiology with DOH
Detection					S.D. 2	A - 7, K - 10	1.16.2
	Responsible Agency (s)	S.D 2 pg. 20	A-1 A-8	1.16.2 pg.5	Maryland Department of Health & Mental Hygiene	Department of Health, Department of Environmental Quality, Department of Emergency Services, Virginia Department of Agriculture and Consumer Services	Department of Health, Bureau of Epidemiology
	Data collection Locations	S.D 2 pg. 20	N/A	1.16.2 pg.5	All counties and Baltimore City: Emergency Medical Service, Hospitals, Hospital Emergency Departments, Office of the Chief Medical Examiner, Public Health Facilities, augmented by veterinary practitioners and veterinary diagnostic services	Detail Not Specified	Detail Not Specified, "may be detected by EMS providers, hospital staff, physician services, or other means"
	Standard for Detection: Time	S.D 1 pg. 20	N/A	N/A	Detection in 72 hours	Detail Not Specified	Detail Not Specified
Notification					A.1 / A.2 / A.3 // A.5	Page 7, D.	1.5 / 1.16.1 / 1.16.2
	Responsible Agency (s)	A.2 pg. 21	D-7	1.5 pg. 3	Maryland Department of Health & Mental Hygiene	Virginia Emergency Operations Center	Announced – EMA / Unannounced – DOH

Section V, Figure 1: OUTLINED EXISTING RESOURCES, SIMILARITIES, AND DIFFERENCES (continued)

		MD	VA	DC	Maryland	Virginia	District of Columbia
	Findings Reported to these agencies:	A.3- A.5 pg. 21	D-7	1.5 pg. 3 1.16 pg. 6	Local Health Departments, Hospital Infection Control Programs, MEMA, MIEMSS within 24 hours of findings	Appropriate state and federal agencies	Local Hospitals through Clearing House Hospital Network, Other Jurisdictions/agencies through EMA Emergency Operations Center; notification of regional/state/federal public health agencies by Director, DOH or designee. Announced Event – EMA would notify; Unannounced Event – Director of DOH would alert EMA and EMA would notify according to District's response plan
	Levels of Notification	A.1 pg. 21	D-3 D-6	N/A	Alert levels: "Normal and Routine," "Suspect Findings," "Confirmed Outbreak," "Notice of Upgrade of Alert or Cancellation of Alert"	Routine Operations, Increased Readiness, Response Operations, Recovery Operations	Detail Not Specified
Diagnosis (Agent Identification)					B. Department of Health and Mental Hygiene, Functional Area Tasks, 1.B	I - 12 & 13, K - 10	1.13.1
	Responsible Agency (s)	1.B.1 pg.31	I-13	1.13.1	Maryland Department of Health & Mental Hygiene, Laboratories Administration	Virginia Department of Emergency Services, Departments of Health, Environmental Quality, Agriculture and Consumer Services, and Military Affairs	Bureau of Epidemiology and Disease Control, Preventative Health Service of DOH, and DCFEMS HazMat Team
	Diagnosis Standard	1.B.1 pg.31	I-12	N/A	Capable of analyzing and accurately identifying, at a minimum, the current "A" list of biological agents as identified by the federal Center for Disease Control and Prevention	To develop the capability to quickly identify the use, level of, and exposure to biological agents following an act of terrorism, and implement the necessary protective actions to prevent, limit, and control exposure to emergency workers and the general public	Detail Not Specified
Medical Prophylaxis					MPC. 1 1-6	K-2	2.0

Section V, Figure 1: OUTLINED EXISTING RESOURCES, SIMILARITIES, AND DIFFERENCES (continued)

		MD	VA	DC	Maryland	Virginia	District of Columbia
	Responsible Agency (s)	MPC 1 pg. 22-23	K-2	2.0 pg. 7	Local Hospitals (100 patients for 72 hours), Local Health Departments (100 patients for 72 hours); Secretary of Department of Health and Mental Hygiene should obtain assurance and provide assistance, if necessary, so that each Local Health Department has a cache of medications under its control sufficient to treat one hundred live victims for three days	Local and regional Medical Rescues, backed by State through Virginia Catastrophic Casualty Plan	Identified by DOH Director, Chief & State Epidemiologist for the Bureau of Epidemiology and Disease Control; EMA will help implement plan
	Target Population Determination	MPC 4.8 pg. 35-36	N/A	2.2 pg. 8	Department of Health and Mental Hygiene should identify, train, and educate a specific cadre of health professionals knowledgeable about biological agents to provide essential scientific and medical resource to state EOC, health care facilities, and the media during a WMD incident	Detail Not Specified	Based upon identified agent, CDC protocol, and recommendations of subject matter experts
	Identification of Special Need Populations	MPC 4.2 pg. 51-52	N/A	2.1 to 2.1.5	Local Health Office, establishment of alternate treatment centers both on and off the facility's campus	Detail Not Specified	Yes
	Determination of Prophylaxis Regimens	MPC 4.8 pg. 35-36	N/A	2.1	Department of Health and Mental Hygiene should identify, train, and educate a specific cadre of health professionals knowledgeable about biological agents to provide essential scientific and medical resource to state EOC, health care facilities, and the media during a WMD incident	Detail Not Specified	Determined by Chief and State Epidemiologist for the Bureau of Epidemiology and Disease Control, CDC protocol, and recommendations of subject matter experts
	Plan for Administering Prophylaxis	MPC 4.2 pg. 51-52	N/A	2.3	Local Health Office, establishment of alternate treatment centers both on and off the facility's campus	Detail Not Specified	Carried out by DOH and EMA through unified command structure

Section V, Figure 1: OUTLINED EXISTING RESOURCES, SIMILARITIES, AND DIFFERENCES (continued)

		MD	VA	DC	Maryland	Virginia	District of Columbia
	Specifics of Administration	MPC 4.2 pg. 51-52	N/A	2.3 to 2.3.5	Local Health Office, procedures and treatment protocols for separating and handling victims, casualties, and the worried well	Detail Not Specified	Suggested considerations only
	Personnel required to carry out the approved prophylaxis program	MPC 4.3 pg. 52	N/A	2.4	Local Health Office	Detail Not Specified	Determined by the Director of the DOH, the Chief and State Epidemiologist for the Bureau of Epidemiology and Disease Control, CDC protocols, and recommendations of subject matter experts, and approved by the Director of the DOH
Mass Patient Care					MPC. 1 & 2, B. Department of Health and Mental Hygiene, Functional Area Tasks Section 4	K - 1 thru K - 10, Annex P	3.0
	Responsible Agency (s)	MPC 1 pg. 22-23	K-1 K-2	3.1.2	Local Health Offices, overseen by Department of Health and Mental Hygiene	Assigned to Local Resources, Virginia Department of Health, Department of Emergency Services, Department of Mental Health, Mental Retardation and Substance Abuse	Coordinated by DOH through EMA and supported by American Red Cross
	Treatment Protocols	MPC 4.8 pg. 35-36	K-10	3.2 3.2.1	Department of Health and Mental Hygiene should identify, train, and educate a specific cadre of health professionals knowledgeable about biological agents to provide essential scientific and medical resource to state EOC, health care facilities, and the media during a WMD incident	Assigned to Department of Health, DCLS (?), and Department of Health Professionals; Details not specified	Determined by Director, DOH, the Chief and State Epidemiologist for the Bureau of Epidemiology and Disease Control, CDC protocols, and recommendations of subject matter experts, and approved by the Director, DOH
	Infectious Disease	MPC 4.2 pg. 51-52	K-10	3.1.5	Local Health Office, procedures and treatment protocols for separating and handling victims, casualties, and the worried well	Assigned to Virginia Department of Health; Details not specified	Infectious Diseases section of the DOH at the direction of the state epidemiologist
	Casualty Collection Sites and Shelters	4.2 pg. 51	K-10	3.1.1	Local Health Office, establishment of alternative treatment centers both on and off the facility's campus	Assigned to Virginia Department of Health, DCLS, Department of Health Professionals; Details not specified	Pre-identified through the auspices of EMA and DCFEMS

Section V, Figure 1: OUTLINED EXISTING RESOURCES, SIMILARITIES, AND DIFFERENCES (continued)

		MD	VA	DC	Maryland	Virginia	District of Columbia
	Voluntary Personnel	4.2 (5) pg.52	K-10	3.1.6	Local Health Office, credentialing of volunteers not affiliated with a health care facility	Assigned to Virginia Department of Health, DCLS (?), and Department of Health Professionals; Details not specified	Through the JIC, directed to predetermined staging area for backfill of exposed staff or fleeing staff from facilities
	Transportation	4.1 4.3 pg. 56	K-10	3.3	Local Emergency Medical Services	Assigned to Virginia Department of Health; Details not specified	Utilization of existing health care facilities will be coordinated by the DOH. EMS transportation officer, designated by the incident commander, will determine the distribution of casualties from the scene
	Security	4.2 (7) pg. 52	K-10	3.4	Local Health Office, arrangements for security for the facility and any alternate treatment centers and cites	Assigned to Virginia State Police; Details not specified	The EMA shall coordinate the security for treatment areas, medication storage areas, immunization stations, etc.
	Family Support	pg. 75	N/A	3.6	MEMA, establishing a Family Center	Detail Not Specified	DOH will assist commission on Mental Health, EMA, the Red Cross and other agencies to establish a family support program for the families of casualties
	Worried Well	4.2 (11) pg. 52	N/A	3.7	Local Health Office, protocols for separating and handling victims, casualties, and worried well	Detail Not Specified	DOH will assist commission on Mental Health, EMA, the Red Cross and other agencies to ensure appropriate medical and psychological care for the "worried well"
	CISD	4.2 (14) pg. 52	P-1	3.8	Local Health Office, CISD for facility staff	Assigned to Department of Mental Health, Mental Retardation, and Substance Abuse Services, in addition to Community Service Boards and other mental health organizations; standard is set at 48 hours after disaster	DOH will assist commission on Mental Health, EMA, the Red Cross, and other agencies to establish a CISD program
	Resources						

Section V, Figure 1: OUTLINED EXISTING RESOURCES, SIMILARITIES, AND DIFFERENCES (continued)

		MD	VA	DC	Maryland	Virginia	District of Columbia
	Supplies, Equipment, Pharmaceuticals, etc.	4.2 pg. 52	K-10	3.9	Local Hospitals and Local Health Offices supported by the Department of Health and Mental Hygiene	Assigned to Department of General Services; Details not specified	DOH will provide on-going assessment of emergency equipment, emergency supplies, and pharmaceutical needs and initiate the appropriate requests to ensure those needs are met
	Human Resources	4.2 pg. 52	K-10	3.1.4	Local Hospitals, Local Health Offices, Local Emergency Medical Services	Assigned to Virginia Department of Health, DCLS (?), and Department of Health Professionals; Details not specified	NDMS and other federal assets would come from the DOH Director through EMA as soon as the need to augment staff is projected to exceed the available manpower
EMS Resources					G. Local Emergency Medical Services	K - 10	3.1.1
	Responsible Agency (s)	G pg. 54	K-10	3.1.1	Local Emergency Medical Services	Local and regional Medical Rescues, backed by Virginia Department of Health, DCLS (?), Department of Health Professionals; EMS resources not specified	DC Fire & EMS
Hospital Plan							
	Responsible Agency (s)	N/A	N/A	N/A	Local Health Office and Department of Health and Mental Hygiene	Detail Not Specified	Detail Not Specified
	Provision for Disaster Plan	3.2 pg. 46	N/A	3.1.3	Alternate Treatment Centers, sheltering, decontamination, interfacility/ interhospital credentialing, volunteer credentialing, additional medical equipment/supplies, security, patient identification, water/food/waste disposal, temporary morgue arrangements, procedures and treatment protocols, CISD, discontinuing services, financial accounting, mutual assistance, unified command, PIO, locally identified issues	Detail Not Specified	Human Resources: Purview of Medical facilities and may require activation of internal personnel call-back systems and disaster plans; physician and nurse specialists through Clearinghouse Hospital Network

Section V, Figure 1: OUTLINED EXISTING RESOURCES, SIMILARITIES, AND DIFFERENCES (continued)

		MD	VA	DC	Maryland	Virginia	District of Columbia
ESF 8 - Operations Plan					Appendix G	C - 3 & C - 4, K - 1 thru K - 9	No integration plan specified
	Responsible Agency (s)				Department of Health and Mental Hygiene	Department of Health	Director, DOH
	Provisions for Integration	App G	C-3 C-4	N/A	Agreements between county health departments should include provisions for aid from FEMA	Coordination with ESF-8 agencies	
Mass Fatality Management					D. Office of Chief Medical Examiner, Functional Tasks; Appendix A	K - 10	4.0
	Responsible Agency (s)	D pg. 42 App A	K-10	4	Office of Chief Medical Examiner	Assigned to Virginia Department of Health & DCLS (?); Office of Chief Medical Examiner through Mass Fatality Disaster Plan	Office of the Chief Medical Examiner will oversee the management of the mass fatalities, including identification of casualties
	Next of Kin Notification	2.1 pg. 42	N/A	4.2	Office of Chief Medical Examiner & MEMA Family Center	Detail Not Specified	Office of the Chief Medical Examiner shall, with the assistance of other agencies, provide next of kin information
	Temporary Storage of Deceased	3.2 pg. 43	N/A	4.3	Office of the Chief Medical Examiner may establish a temporary morgue and designate its functions.	Detail Not Specified	Office of the Chief Medical Examiner shall designate additional facilities
	Deployment of NDMS-DMORTS	3.3 pg. 43	N/A	4.3	Duties assigned to Office of the Chief Medical Examiner, although no specific provisions are made	Detail Not Specified	Office of the Chief Medical Examiner may request through EMA

APPENDIX N

Medical Surge Planning Team

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Medical Surge Planning Team

MWCOG

Frederick Corder, MD, Chair
Chair, COG Health Officers Committee
Prince George's County Department of Health

William Armistead
Virginia Department of Mental Health,
Mental Retardation and Substance
Abuse Services

Clark Beil
Virginia Department of Health

Shayne Brannman
US Department of Health and Human
Services

George H. A. Bone, MD
Prince George's County Medical Society

Michael Bryce
US Public Health Service and Federal
Emergency Management Agency

Thomas Calhoun, MD
District of Columbia Department of
Health

Julie Casani, MD
Maryland Department of Health and
Mental Hygiene

Michael Coe (for Susan Glover)
Adventist Health Care

Carnell Cooper, MD
Prince George's Hospital Center

Tim Coté, MD
District of Columbia Department of
Health

Craig DeAtley
Medstar

John Donohue
Maryland Institute for Emergency
Medicine

Suzan Dunaway
U.S. Department of Health and Human
Services

Melinda Duncan
Virginia Emergency Management
Services

Jeff Elting, MD
District of Columbia Hospital
Association and
District of Columbia Department of
Health

Erin Fowler
US Department of Health and Human
Services

Keith Frederick
Kaiser Foundation Health Plan

Victor Freeman, MD
Medical Society of the District of
Columbia

Gabriela Gonzalez, MD,
District of Columbia Department of
Health

Dan Hanfling, MD
INOVA Fairfax

Patricia Hawes
Suburban Hospital

Olivia Wong Kubasik
District of Columbia Hospital
Association

Mercedes Lawrence
Prince George's County Health
Department

Daniel Lucey, MD
District of Columbia Department of
Health and Office of the Mayor

Robert Mauskapf
Virginia Department of Health

Beverly Pritchett, Col., MS
Joint Force Headquarters NCR, U.S.
Army

Michael Staley
Centers for Disease Control and
Prevention

Clay Stamp
Maryland Institute for Emergency
Medicine

James "Smokey" Stanton
Maryland Institute for Emergency
Medicine

Staff

Nancy Rea
MWCOG

Sean O'Donnell
MWCOG

Lynn Frank
Consultant

Martha Rosacker
Consultant

APPENDIX O

State Information

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State Information

Maryland, Virginia and the District of Columbia each have a State plan that will guide response activities within those states. This document has been informed by these state plans. For more information about planning or response activities within these states, the contact information below should provide a useful starting point.

District of Columbia:

Emergency Health and Medical Services Administration
(202) 671-5000

Maryland:

Office of Public Health Preparedness and Response, Department of Health and Mental Hygiene 410-767-0823
Email: prepared@dhmh.state.md.us

Virginia:

Virginia Emergency Operations Center (VEOC)
800-468-8892
Fax: 800-674-2419

Virginia Dept. of Health 24/7
866-531-3068

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APPENDIX P

EMS Activities across the Six Tiers

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EMS Activities across the Six Tiers

Tier	Overt	Covert
1. Local Event	Dispatch & Response Limited Mutual Aid Communicate with Individual Hospitals Hospital Diversion Policies	Increase Universal Precautions Hospital Diversion
2. More than 1 Jurisdiction	Dispatch and Response Increased Mutual Aid Central Hospital Coordination Hospital Diversion	Increase Universal Precautions Hospital Diversion
3. Regional Event	Dispatch & Response Task Force & Work Group Response EMS Supervisors to Hospital Communication Coordination Centers	Increase Universal Precautions Hospital Diversion Increased Immunizations of Personnel
4. State Response	Dispatch & Response Task Force & Work Group Response EMS Supervisors to Hospital Communication Coordination Centers State EOC opens State Assistance to Coordinate Resources w/Locals	Increase Universal Precautions Hospital Diversion Increased Immunizations of Personnel Support of Public Health for Transport of Resources
5. Entire NCR Region	Dispatch & Response Task Force & Work Group Response EMS Supervisors to Hospital Communication Coordination Centers State Assistance to Coordinate Resources w/Locals State EOCs Coordinate Activities	Increase Universal Precautions Hospital Diversion Increased Immunizations of Personnel Alternate Destination Central Coordination of Transport of Affected Patients
6. National Response	Coordinate with NDMS Transports Accept assistance from DMAT Teams Alternative Destinations	