

Emergency Preparedness Guidelines For Weapons of Mass Destruction

Introduction

The events of September 11th, 2001 highlighted our need to improve our emergency response plans and enhance our capability to manage an incident of Weapons of Mass Destruction (WMD). NASA Occupational Health Program (OHP) health care facilities must be prepared to immediately put their emergency management plan into action and initiate communications to effectively mobilize human and material resources. The clinic plans must be fully integrated into the Center wide emergency response plan. Emergency plans need to be reviewed regularly because threats/events may change with knowledge and time.

Objectives

Many NASA OHP clinics lack plans for responding to WMD events at their Center. The objectives of these Emergency Preparedness Guidelines are as follows:

- o Assist individual NASA Centers to improve their current Emergency Response Plans.
- o Ensure that Centers' Emergency Response Plans are up to date.
- o Ensure Center complete a threat vulnerability analysis.
- o Ensure Centers' Emergency Response Plans are compliant with latest JCAHO standards and with "best industry practices".
- o Develop emergency medical plans consistent with their resources, capabilities and Center needs.
- o Ensure Centers develop communication links with the local health care community.
- o Ensure Center integrate their emergency response plans with local and state response plans.
- o Assist Centers to understand and access federal assets available during an WMD incidents.

Emergency Response Planning

The emergency medical response plan must be a component of the overall Center emergency preparedness plan. The Center plan is established usually with key areas such as medical, environmental, safety and security in coordination with the local community emergency planning priorities for potential emergencies identified during the threat vulnerability analysis. The plan must include the following components:

- o Describe the activation of the emergency response plan, e.g., how, when and by whom.
- o Identify which personnel are responsible for which activities during emergencies.
- o Notifying personnel when emergency procedures are initiated.
- o Identifying personnel during emergencies.
- o Define and integrate the Center's role with that of local emergency response agencies.
- o Develop an emergency command structure.
- o Detail the processes for notification of external authorities of emergencies.

- o Management of patient care activities, logistics, security, and communications.
- o Detail the evacuation processes for the organization.
- o Establish an alternate care site(s) that meet clinical needs.
- o Reestablish and/or continue operation following the disaster.
- o Provide alternate means of meeting essential building utility needs to provide continuous service.
- o Monitor ongoing emergency plan performance in drills and real emergencies.
- o Determine how an annual evaluation of the plan's objective, scope, performance, and effectiveness will occur.
- o Detail the transfer and tracking of employees, staff and equipment to alternate care sites.
- o Establish communication processes with alternate care sites.
- o Establish backup internal and external communication systems.
- o Identify radioactive, biological, or chemical isolation and decontamination sites.

Threat Vulnerability Analysis

Each Center must evaluate their existing emergency response plans to determine the extent to which they are prepared to respond to a WMD event. The process begins with a threat vulnerability analysis at each Center. The assessment must consider the following:

- o All potential health threats and the direct and indirect effects they could have on the Center.
- o Clarification of health threats, e.g., natural health, man-made health and internal versus external threats.
- o Consider known risk, geographic location and presence of local high-risk industry when estimating probability.
- o Evaluate how well your current emergency response plan deals with various threats, e.g., training level of staff and availability of resources for various health threats.
- o Consider the probability of occurrence and the human, property and operational impact on the Center.
- o Rate of probability of occurrences of the individual health threats, e.g., high, moderate, or low.
- o Rate how well your clinic is prepared to deal with different situations, e.g., good, fair, or poor.

Communications

The emergency response plan should include measures to ensure that the OHP clinic is capable of reliable communication with their own response personnel, as well as, other personnel on Center involved in responding to emergencies. The communication system should:

- o Disseminate accurate information to medical staff, first responders and decision makers.

- o Include protocols for notifying Emergency Operation Center in the affected area to facilitate communication and coordination in the event of a WMD event.
- o Include a sufficient number of radios and radio frequencies to facilitate communication between organizations.
- o Maintain a contact list of critical local and state public health, medical, law enforcement, emergency management personnel and Center medical personnel, distribute as appropriate and verify at least quarterly.
- o Develop provision to disseminate information about diagnosis and patient/employee management for high-risk terrorism threat agents to local and state health care providers, hospitals, clinics, laboratories and pharmacies.
- o Address internal and external communications needs including designating personnel authorized to communicate and receive emergency information between the Center medical personnel, emergency response personnel and community health care providers.
- o The procedures for periodic testing of primary and back-up emergency communications should be addressed in the plan.

Clinical Requirements

The emergency response plan describes the criteria or conditions that trigger the activation of the plan. An individual and alternate should be identified to serve in the leadership/command position for clinic operations and the interface with the Center Incident Command Officer.

An alternative site for the clinic operations needs to be identified and prepared in the event the clinic is not available for employee/patient care. The clinic and alternate site must have an emergency power generator and water available. Special consideration should be given to isolation guidelines. The guidelines for isolation precautions, patient placement and transport should be developed. The protocol for cleaning and disinfecting of patient care areas needs should be identified for bacterial agents, viruses and biological toxins.

The medical personnel providing clinic coverage during a emergency should be offered immunizations based on the recommendation by the Centers for Disease Control and Prevention (CDC) for health care workers. A post exposure immunization plan should be developed to identify and manage health care workers exposed to infectious patients.

Staff should be familiar with the local health care community and the resources available in the event of an emergency. A list of important emergency phone numbers must be maintained and updated periodically. Staff should become familiar with relevant lines of communications and the availability of the emergency phone number list.

The Center clinics should develop an increased awareness of the ongoing threat of bioterrorism. They should become familiar and develop a working knowledge of the CDC's most likely and dangerous pathogens through ongoing and periodic training. Ongoing education should provide opportunities to accurately assess and quickly

recognize signs and symptoms of diseases and monitor disease patterns and numbers of cases.

Management of incidents should be guided by the **SEE** principles: **S**afe: no one gets hurt; **E**ffective: Everyone works towards stated objectives; **E**fficient: All resources utilized to maximum benefit.

Emergency Preparedness Supplies

The final determination of pharmaceuticals and related supplies to be stocked for managing incidents of WMD rests with the Center Medical Director. These decisions should be based on the threat vulnerability assessment and recommendation from the Centers for Disease Control and Prevention (CDC). The amount of pharmaceuticals and supplies is based on the Center's population and what is needed to survive 24 hours until relief supplies arrive from the NPSP. Suggested pharmaceuticals include:

- o For bacterial agents:
 - o Ciprofloxacin
 - o Doxycycline
 - o Penicillin
 - o Chloramphenicol
 - o Azithromycin
 - o Rifampin
 - o Streptomycin
 - o Gentamicin
- o For cyanides:
 - o Cyanide antidote kits containing amyl nitrite, sodium nitrite, and sodium thiosulfate.
- o For lewisite:
 - o British anti-lewisite
- o For nerve agents:
 - o Atropine
 - o Pralidoxime chloride
 - o Diazepam (or lorazepam)

Medical Equipment and Supplies

- o Mechanical respiratory ventilators
- o IV pumps and poles
- o IV supplies
 - o IV fluids-D5W, D5NaCl, D5 lactated ringers
 - o In-dwelling catheters
 - o IV sets
- o Suction machines
- o Stretchers
- o Wheelchairs
- o Linens
- o Bandages and dressings

Health Surveillance and Epidemiology Investigation

NASA Center emergency response plans should address the need for epidemiological investigations. An individual should be identified in the plan to manage enhanced surveillance and epidemiological investigations during a bioterrorism incident.

Surveillance and epidemiologic capability is the foundation for the detection, evaluation and designing of an effective response to WMD events. This capacity will facilitate the initial detection and response in a WMD to monitor the impact of these events and the effectiveness of the responses. The detection of WMD events using biological or certain chemical agents will require linking of data from a variety of sources. An effective response will depend on the timeliness and quality of communications among Center personnel, public health agencies at the local, state, and federal levels, laboratories, poison centers, and other health response partners.

Event Notification

The Center emergency response plan should identify the individual and alternates responsible for assessing the threat to employee health and consequences of the incident. The plan should address how event-related data will be received and how the assessment information will be distributed and used.

Center Alert

The emergency response plan should describe the process and means that the employee population at a Center will be notified about a public health emergency. The notification should be coordinated with other response organizations. The notification should advise employees of protective actions and the notification process should be tested on an annual basis. Notification should be provided in other languages at Centers with non-English speaking populations.

Employee Education and Emergency Public Information

Each Center should provide an education program covering WMD health matters of interest to the population. The educational program could be ongoing to update the employee population with new health related information, emerging trends, and preventative health measures.

Patient/Employee Decontamination

The emergency plans should have provisions for performing effective decontamination, when necessary after a WMD event. Effective planning and consultation during the threat or incident can limit unnecessary decontamination substantially and ensure needed decontamination actions are timely, sufficient, and effective.

Mass Care

In the event of a mass causality the OHP clinics would not likely be directly managing the mass casualties but the plan would need to address such a situation. Centers should be aware of the health care facilities responsible for mass care in their community.

Environmental Issues

Though the clinics would not have any direct responsibility for dealing with the environmental consequences of a WMD event, they do have an advisory role to play and the responsibility to monitor the employee's long-term health and safety issues.

Mental Health

Emergency situations cause a significant amount of stress on responders and victims. The emergency plan must include provisions for identifying and obtaining mental health resources from those affected by an emergency situation. The responsibility for ensuring resources rests with the Center Employee Assistance Manager.

Mass Fatalities

WMD emergencies can generate a significant number of fatalities that poses special challenges. The OHP clinic should consult with medical examiners or coroners to develop protocols for dealing with a large number of fatalities.

National Pharmaceutical Stockpile

The National Pharmaceutical Stockpile (NPSp) was created by the Centers for Disease Control and Prevention (CDC). The NPSp insures the availability and rapid deployment of the life-saving pharmaceuticals, antidotes, medical supplies and equipment needed to counter the effects of biological agents, nerve agents, and chemical agents. It consists of caches (push packets) of antibiotics, antidotes, antitoxins, life support and airway maintenance supplies and other medical and surgical supplies stored across the country. Upon request by a state, the NPSp program stands ready for immediate deployment to any U.S. location in the event of a terrorist attack directed against a civilian population. State and local authorities are then responsible for the distribution of supplies within the community. NASA clinics must know how to access this resource if needed to meet the needs of the employee population.

Laboratory Diagnosis and Support

Clinical laboratories play a critical role in the readiness and response of bioterrorism attacks. They define a bioterrorism incident through the identification of a bioterrorism agent. The laboratories are responsible for developing guidelines and protocols for sampling and labeling, packaging, communication of test results and safe disposal of samples. Laboratories are also responsible for transportation of the samples, Chain of Custody (COC) and referrals and contacts of appropriate level laboratories.

NASA Center clinics must be knowable about the laboratories they utilize. This includes the level of the laboratory, and their capabilities. Clinics should know the biosafety level of the laboratory. The certification and accreditation requirements of your laboratory should be known. This will require Centers to continually evaluate the laboratories being utilized.

The CDC, Association of Public Health Laboratories and the FBI developed the Laboratory Response Network (LRN) to aid with the response to bioterrorism. The goals of the LRN are to quickly and safely identify bioterrorism agents and coordinate inter-

organizational activities. The laboratory serves as both a testing and exchange network. The LRN is composed of county, city, state and federal public health laboratories that accept sample from various sources and organizations. The LRN has level A, B, C and D laboratory but primarily level B and C labs.