

Tracer Protection Services

BIOTERRORISM PREPAREDNESS PLAN

PURPOSE:

This Bioterrorism Emergency Prepared Plan is to provide for the safety of the patients, visitors, and employees and to plan for specific actions to be taken. If a bioterrorism event is suspected, the following response system will be activated.

SECTION I: GENERAL CATEGORICAL RECOMMENDATIONS FOR ANY SUSPECTED BIOTERRORISM EVENT

A. REPORTING REQUIREMENTS AND CONTACT INFORMATION

Notification should immediately include OLOLRMC Infection Control and Administration Infection Control. Administration will be responsible for prompt communication with the local and state health departments, the FBI field office, the local police, the C.D.C., and medical emergency services.

B. POTENTIAL AGENTS

(anthrax, botulism, they are described in them are described in prioritize these agents in any Subsequent installments of this with bioterrorism potential, including fever, viral hemorrhagic fevers, and with staphylococcal enterotoxin B.

Four diseases with recognized bioterrorism potential (anthrax, botulism, plague, and smallpox) and the agents responsible for Section II of this document. The CDC does not order of importance or likelihood of use. document will address additional agents those that cause tularemia, brucellosis, Q viral encephalitis, and disease associated

C. DETECTION OF OUTBREAKS

CAUSED BY BIOTERRORISM AGENTS events, in which persons are unknowingly suspected only upon recognition of unusual disease Bioterrorism may also occur as announced events, in warned that an exposure has occurred. A number of bioterrorism events have occurred in the United States during but these were determined to have been "hoaxes", that is, there true exposures to bioterrorism agents. The possibility of a bioterrorism event should be ruled out with the assistance of the FBI and state health officials.

Bioterrorism may occur as covert exposed and an outbreak is clusters or symptoms. which persons are announced 1998-1999, were no

1. SYNDROME-BASED CRITERIA

Rapid response to a bioterrorism-related outbreak requires prompt identification at its onset. Because of the rapid progression to illness and potential for dissemination of some of these agents, it may not be practical to await diagnostic laboratory confirmation. Instead, it will be necessary to

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initiate a response based on the recognition of high-risk syndromes. Each of the agent-specific plans in Section II includes a syndrome description; i.e. typical combination of clinical features of the illness at presentation; that should alert healthcare practitioners to the possibility of a bioterrorism-related outbreak.

2.

EPIDEMIOLOGICAL FEATURES

Epidemiological principles must be used to assess whether a patient's presentation is typical of an endemic disease or is an unusual event that should raise concern. Features that should alert healthcare providers to the possibility of a bioterrorism-related outbreak include:

- * A rapidly increasing disease incidence-within hours or days-in a normally healthy population
- * A epidemic curve that rises and falls during a short period of time.
- * Unusual increases in the number of people seeking care, especially with fever, respiratory, or gastrointestinal complaints.
- * A endemic disease rapidly emerging at an uncharacteristic time or in an unusual pattern.
- * Lower attack rates among people who had been indoors, especially in areas with filtered air or closed ventilation systems, compared with people who had been outdoors.
- * Clusters of patients arriving from a single locale.
- * Large numbers of rapidly fatal cases.
- * Any patient presenting with a disease that is relatively uncommon and has bioterrorism potential; i.e. pulmonary anthrax, tularemia, or plague.

D.

INFECTION CONTROL PRACTICES FOR PATIENT MANAGEMENT

Infection Control, Administration, and Patient Care Services will collaborate on the management of patients following suspected or confirmed bioterrorism events. Strong leadership and effective communication are paramount. Refer to the Bioterrorism Patient Management in the appendix for a summary reference.

1. ISOLATION PRECAUTIONS

Agents of bioterrorism are generally not transmitted from one person to another; re-aerosolization of these agents are unlikely. All patients, including symptomatic patients with suspected or confirmed bioterrorism related illnesses, are to be managed utilizing Standard Precautions. Standard Precautions are designed to reduce transmission from both recognized and unrecognized sources of infection, and are recommended for all patients receiving care, regardless of their diagnosis or presumed infection status. For certain diseases or syndromes; i.e. smallpox, pneumonic plague; additional precautions may be needed to reduce the likelihood for transmission. See Section II for specific diseases and requirements for

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additional isolation precautions.

Standard Precautions prevent direct contact with all body fluids (including blood), secretions, excretions, non-intact skin (including rashes), and mucous membranes. Standard Precautions routinely practiced by healthcare providers include:

*** HAND WASHING**

Hands are washed after touching blood, body fluids, excretions, secretions, or items contaminated with such fluids, whether or not gloves are worn. Hands are washed immediately after gloves are removed, between patient contacts, and as appropriate to avoid transfer of microorganisms to other patients and the environment

***GLOVES**

Clean, non-sterile gloves are worn when touching blood, body fluids, excretions, secretions, or items contaminated with such body fluids. Clean gloves are put on just before touching mucous membranes and non-intact skin. Gloves are changed between tasks and between procedures on the same patient if contact occurs with contaminated material. Hands are washed promptly after removing gloves and before leaving a patient's care area.

*** MASKS/EYE PROTECTION OR FACE**

A mask and eye protection, or a face shield, are worn to protect mucous membranes of the eyes, nose, and mouth while performing procedures and patient care activities that may cause splashes of blood, body fluids, excretions, or secretions.

*** GOWNS**

A gown is worn to protect skin and prevent soiling of clothing during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, excretions, or secretions. Selection of gowns and gown materials should be suitable for the activity and amount of body fluid likely to be encountered. Soiled gowns are removed promptly and hands are washed to avoid transfer of microorganisms to other patients and environments.

2. PATIENT PLACEMENT

In small-scale events, routine patient placement and infection control practices should be followed. However, when the number of patients is too large to allow routine triage and isolation strategies, if required, it will be necessary to apply practical alternatives. These may include cohorting patients who are present with similar syndromes; i.e. grouping affected patients into a designated section of a clinic or Emergency Department, or a designated unit or floor, or even setting up a response center at a separate building. Designated Isolation rooms will be utilized initially. If additional cohorting sites are needed they will be chosen by the Infection Control Committee and Administration, in consultation with Plant Services staff,

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based on patterns of airflow and ventilation, availability of adequate plumbing and waste disposal, and capacity to safely hold potentially large numbers of patients. The triage or cohort site should have controlled entry to minimize the possibility for transmission to other patients and to staff members not directly involved in managing the outbreak. At the same time, reasonable access to vital diagnostic services, i.e. radiography departments, should be maintained.

3.

PATIENT TRANSPORT

Most infections associated with bioterrorism agents cannot be transmitted from patient-to-patient. Patient transport requirements for specific potential agents of bioterrorism are listed in Section II. In general, the transport and movement of patients with bioterrorism-related infections, as for patients with any epidemiologically important infections; i.e. pulmonary tuberculosis, chickenpox, measles; should be limited to movement that is essential to provide patient care, thus reducing the opportunities for transmission of microorganisms.

4. CLEANING, DISINFECTION, AND STERILIZATION OF EQUIPMENT AND ENVIRONMENT

Principles of Standard Precautions should be generally applied for the management of patient-care equipment and environmental control.

- *Each unit has in place adequate products for the routine care, cleaning, and disinfections of environmental surfaces, beds, bed rails, bedside equipment, and other frequently touched surfaces and equipment, and should ensure that these procedures are being followed.
- *Vesphene or the approved germicidal cleaning agents used by Housekeeping are available in patient care areas to use for cleaning spills of contaminated material and disinfecting non-critical equipment.
- *Used patient-care equipment soiled or potentially contaminated with blood, body fluids, secretions, or excretions should be handled in a manner that prevents exposures to skin and mucous membranes, avoids contamination of clothing, and minimizes the likelihood of transfer of microbes to other patients and environments.
- *Policies should be in place to ensure that reusable equipment is not used for the care of another patient until it has been appropriately cleaned and reprocessed, and to ensure that single-use patient items are appropriately discarded.
- *Sterilization is required for all instruments or equipment that enter normally sterile tissues or through which bloods flows.
- *Rooms and bedside equipment of patients with bioterrorism-related infections should be cleaned using the same procedures that are used for all patients as a component of Standard precautions, unless the infecting microorganism and the amount of environmental contamination indicates special cleaning. In addition to adequate cleaning, thorough disinfection of bedside equipment and environmental surfaces may be indicated for

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certain organism that can survive in the inanimate environment for extended periods of time. The methods and frequency of cleaning and the products used are determined by the existing Infection Control policies.

*Patient linen should be handled in accordance with Standard Precautions.

Although linen may be contaminated, the risk of disease transmission is negligible if it is handled, transported, and laundered in a manner that avoids transfer of microorganisms to other patients, personnel, and environments. Policy and local/state regulations should determine the methods for handling, transporting, and laundering soiled linen.

*Contaminated waste should be sorted and discarded in accordance with federal, state, and local regulations.

*Follow the policies for the prevention of occupational injury and exposure to bloodborne pathogens in accordance with Standard Precautions.

5. DISCHARGE MANAGEMENT

Ideally, patients with bioterrorism-related infections will not be discharged until they are deemed non-infectious. However, consideration will be given to developing home-care instructions in the event that large numbers of persons exposed may preclude admission of all infected patients. Depending on the exposure and illness, home-care instructions may include recommendations for the use of appropriate barrier precautions, hand-washing, waste management, and cleaning and disinfection of the environment and patient-care items.

6.

POST-MORTEM CARE

Pathology and the Laboratory should be informed of a potentially infectious outbreak prior to submitting any specimens for examination or disposal. All autopsies should be performed carefully using all personal protective equipment and standards of practice in accordance with Standard Precautions, including the use of masks and eye protection whenever the generation of aerosols or splatter of body fluids is anticipated. Instructions for funeral directors will be made available according to suspected infectious disease precautions.

E. POST EXPOSURE MANAGEMENT

1. DECONTAMINATION OF PATIENTS AND ENVIRONMENT

The need for decontamination depends on the suspected exposure and in most cases will not be necessary. The goal of decontamination after a potential exposure to a bioterrorism agent is to reduce the extent of external contamination of the patient and contain the contamination to prevent further spread. Decontamination should only be considered in instances of gross contamination. Decisions regarding the need for decontamination should be made in consultation with state and local health departments.

Decontamination of exposed individuals prior to receiving them for inpatient

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admission may be necessary to ensure the safety of patients and staff while providing care. The designated decontamination area in the Emergency department will be used for patient decontamination prior to entry.

Depending on the agent, the likelihood for re-aerosolization, or a risk associated with cutaneous exposure, clothing of exposed persons may need to be removed. After removal of contaminated clothing, patients should be instructed, or assisted if necessary, to immediately shower with soap and water. **Potentially harmful practices, such as bathing patients with bleach solutions, are unnecessary and should be avoided.** Clean water, saline solution, or commercial ophthalmic solutions are recommended for rinsing eyes. If indicated, after removal at the decontamination site, patient clothing should be handled only by personnel wearing appropriate personnel protective equipment, and placed in an impervious bag to prevent further environmental contamination. Decontamination requirements for specific potential agents of bioterrorism are listed in Section II.

Development of Bioterrorism Readiness Plans should include coordination with the FBI field office. The FBI may require collection of exposed clothing and other potential evidence for submission to the FBI or the Department of Defense laboratories to assist in exposure investigations.

2. PROPHYLAXIS AND POST-EXPOSURE IMMUNIZATION

Recommendations for prophylaxis are subject to change. Current recommendations for post-exposure prophylaxis and immunization are provided in Section II for relevant potential bioterrorism agents. However, up-to-date recommendations should be obtained in consultation with local and state health departments and the CDC. Infection Control, Administration, and Patient Care Services will assist in identifying and managing health care workers exposed to infectious patients. Maintenance of accurate occupational health records will facilitate identification, contact, assessment, and delivery of post-exposure care to potentially exposed healthcare workers.

3. TRIAGE AND MANAGEMENT OF LARGE SCALE EXPOSURES AND SUSPECTED EXPOSURES

The IC Committee, Administration, Plant Services, Emergency Department, Laboratory/Pathology, and Patient Care Services will collaborate to determine how to best deliver care in the event of a large scale exposure. The Internal Disaster Plan is to be used as appropriate. Triage and management planning for large-scale events may include:

- *Establishing networks of communication and lines of authority required to coordinate on-site care.
- *Planning for cancellation of non-emergency services and procedures.
- *Identifying sources able to supply available vaccines, immune globulin, antibiotics, and botulinum anti-toxin with assistance from local and state

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health departments.

- *Planning for the efficient evaluation and discharge of patients.
- *Developing discharge instructions for patients determined to be non-contagious or in need of additional on-site care, including details regarding if and when they should return for care or if they should seek medical follow-up.
- *Determining availability and sources for additional medical equipment and supplies; i.e. ventilators; that may be needed for urgent large-scale care.
- *Planning for the allocation or re-allocation of scarce equipment in the event of a large-scale event; i.e. duration of ventilator support of terminally afflicted individuals.
- *With assistance from the Pathology service, identifying the institution's ability to manage a sudden increase in the number of cadavers on site.

4. PSYCHOLOGICAL ASPECTS OF BIOTERRORISM

Following a bioterrorism-related event, fear and panic can be expected from both patients and healthcare providers. Psychological responses following a bioterrorism event may include horror, anger, panic, unrealistic concerns about infection, fear of contagion, paranoia, social isolation, or demoralization. The COPE team, Employee Assistance Program, and Mental Health Division will assist with counseling needs, and collaborate with emergency response agencies and the media. Local, state, and federal media experts can provide assistance with communications needs.

How to address patient and general public fears:

- *Minimize panic by clearly explaining risks, offering careful but rapid medical evaluation/treatment, and avoiding unnecessary isolation or quarantine.
- *Treat anxiety in unexposed persons who are experiencing somatic symptoms; i.e. with reassurance, or diazepam-like anxiolytics as indicated for acute relief of those who do not respond to reassurance.

To address healthcare worker fears:

- *Bioterrorism readiness education will be provided, including frank discussions of potential risks and plans for protecting healthcare workers.
- *Conduct disaster drills to practice bioterrorism readiness processes..

F. LABORATORY SUPPORT AND CONFIRMATION

This part of the document is subject to updates due to current work underway to improve the diagnostic capacity of laboratories to isolate and identify these agents. Infection Control will work with local, state, and federal public health services to tailor diagnostic strategies to specific events. Currently the **Bioterrorism Emergency Number at the CDC is at the Emergency Response Office, NCEH, 770-488-7100.**

1. OBTAINING DIAGNOSTIC SAMPLES

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See specific recommendations for diagnostic sampling for each agent. Sampling should be performed in accordance with Standard Precautions. In all cases of suspected bioterrorism, collect an acute phase serum sample to be analyzed, aliquotted, and saved for comparison to a later convalescent serum sample.

2. LABORATORY CRITERIA FOR PROCESSING POTENTIAL BIOTERRORISM AGENTS

To evaluate laboratory capacity in the United States, a proposal is being made to group laboratories into one of four levels, according to their ability, to support the diagnostic needs presented by an event. The proposed laboratory levels in the planning stages are:

- *Level A: Clinical laboratories-minimal identification of agents
- *Level B: County/State or other laboratories-identification, confirmation, susceptibility testing
- *Level C: State and other large laboratories with advanced capacity for testing-some molecular technologies
- *Level D: CDC or selected Department of Defense laboratories, such as U.S. Army Medical Research Institute of Infectious Diseases, USAMRIID, Bio Safety Level, BSL, 3 or 4 labs with special surge capacity and advanced molecular typing technique.

3. TRANSPORT REQUIREMENTS

Specimen packaging and transport must be coordinated with local and state health departments, and the FBI. A chain of custody document should accompany the specimen from the moment of collection. For specific instructions, contact the **Bioterrorism Emergency Number at the CDC Emergency Response Office, 770-488-7100**. Identification of appropriate packaging materials and transport media will be coordinated by the Laboratory.

G. PATIENT, VISITOR, AND PUBLIC INFORMATION

Clear, consistent, understandable information should be provided; i.e. via fact sheets; to patients, visitors, and the general public. During bioterrorism-related outbreaks, visitors may be strictly limited.

The Internal Disaster Plan will be utilized and Administration will clarify the lines of authority and flow of communication. IC professionals working with the IC Committee and Administration will coordinate with state and local health agencies, and local emergency services. Marketing will coordinate with local broadcast media systems to decide how communication and action across agencies will be accomplished.

SECTION II: AGENT-SPECIFIC RECOMMENDATIONS

A. ANTHRAX

1. DESCRIPTION OF AGENT/SYNDROME

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a. Etiology

Anthrax is an acute infectious disease caused by *Bacillus anthracis*, a spore forming, gram-positive bacillus. Associated disease occurs most frequently in sheep, goats, and cattle, which acquire spores through ingestion of contaminated soil. Humans can become infected through skin contact, ingestion, or inhalation of *B. anthracis* spores from infected animals or animal products; as in “wool sorter’s disease” from exposure to goat hair. Person-to-person transmission of inhalational disease does not occur. Direct exposure to vesicle secretions of cutaneous anthrax lesions may result in secondary cutaneous infection.

b. Clinical features

Human anthrax infection can occur in three forms: pulmonary, cutaneous, or gastrointestinal, depending on the route of exposure. Of these forms, pulmonary anthrax is associated with bioterrorism exposure to aerosolized spores. Clinical features for each form of anthrax include:

PULMONARY

- *non-specific prodrome of flu-like symptoms follows inhalation of infectious spores
- *Possible brief interim improvement
- *Two to four days after initial symptoms, abrupt onset of respiratory failure and hemodynamic collapse, possibly accompanied by thoracic edema and a widened mediastinum on chest radiograph suggestive of mediastinal lymphadenopathy and hemorrhagic mediastinitis.
- *Gram-positive bacilli on blood culture, usually after the first two or three days of illness.
- *Treatable in early prodromal stage. Mortality is extremely high despite antibiotic treatment if it is initiated after onset of respiratory symptoms.

CUTANEOUS

- *Local skin involvement after direct contact with spores or bacilli
- *Commonly seen on the head, forearms, or arms
- *Localized itching, followed by a papular lesion that turns vesicular, and within 2-6 days develops into a depressed black eschar
- *Usually non-fatal if treated with antibiotics.

GASTRO-INTESTINAL

- *Abdominal pain, nausea, vomiting, and fever following ingestion of contaminated food, usually meat
- *Blood diarrhea, hematemesis
- *Gram-positive bacilli on blood culture, usually after the first two or three days of illness.
- *Usually fatal after progression to toxemia and sepsis

c. Modes of transmission

The spore form of *B. anthracis* is durable. As a bioterrorism agent, it could be delivered as an aerosol. The modes of transmission for anthrax include:

- *Inhalation of spores

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*Cutaneous contact with spores or spore-contaminated materials

*Ingestion of contaminated food.

d. Incubation period

The incubation period following exposure to *B. anthracis* ranges from 1 day to 8 weeks; averaging 5 days; depending on the exposure route and dose:

* 2-60 days following pulmonary exposure

* 1-7 days following cutaneous exposure

* 1-7 days following ingestion

e. Period of communicability

Transmission of anthrax infections from person to person is unlikely.

Airborne transmission does not occur, but direct contact with skin lesions may result in cutaneous infection.

2. PREVENTIVE MEASURES

a. Vaccine availability

*Inactivated, cell-free anthrax vaccine; Bioport Corporation
517-327-1500; -limited availability

b. Immunization recommendations

*Routinely administered to military personnel. Routine vaccination of civilian populations; not recommended.

3. INFECTION CONTROL PRACTICES FOR PATIENT MANAGEMENT

Symptomatic patients with suspected or confirmed infections with *B. anthracis* should be managed according to current guidelines specific to their disease state. Recommendations for chemotherapy are beyond the scope of this document. For up-to-date information and recommendations for therapy, contact the local and state health department and the Bioterrorism Emergency Number at the CDC Emergency Response Office, 770-488-7100

a. Isolation precautions

Standard Precautions are used for the care of patients with infections associated with *B. anthracis*. Standard Precautions include the routine use of gloves for contact with non-intact skin, including rashes and skin lesions.

b. Patient placement

Private room placement for patients with anthrax is not necessary. Airborne transmission of anthrax does not occur. Skin lesions may be infectious, but requires direct skin contact

c. Patient transport

Standard Precautions should be used for transport and movement

d. Cleaning, disinfecting, and sterilization of equipment/environment

Principles of Standard Precautions should be applied; see Section I

e. Discharge management

No special discharge instructions indicated.

f. Post-mortem care

Standard Precautions should be used. Includes wearing P.P.E.s

4. POST EXPOSURE MANAGENMENT

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a. Decontamination of patients/environment

The risk for re-aerosolization of B.anthraxis spores appears to be extremely low in settings where spores were released intentionally or were present at low or high levels. In situations where the threat of gross exposure to B. anthracis spores exists, cleansing of skin and potentially contaminated fomites; i.e. clothing or environmental surfaces; may be considered to reduce the risk for cutaneous and gastrointestinal forms of disease. The plan for decontaminating patients exposed to anthrax may include the following:

- *Instructing patients to remove exposed clothing and store in labeled, plastic bags.
- *Handling clothing minimally to avoid agitation
- *Instructing patients to shower thoroughly with soap and water
- *Instructing personnel regarding Standard Precautions and the wearing of Personnel Protective Equipment (P.P.E.)
- *Decontaminating environmental surfaces using EPA registered/approved sporicidal/germicidal agent or 0.5% hypochlorite solution

b. PROPHYLAXIS AND POST-EXPOSURE IMMUNIZATION

Recommendations for prophylaxis are subject to change. Up-to-date recommendations should be obtained in consultation with local and state health departments and the CDC. Prophylaxis should be initiated upon confirmation of an anthrax exposure.