Annex A

SPECIFIC READINESS PLANS

An Annex to the
Delaware County Comprehensive Emergency Management Plan

SPECIFIC READINESS PLANS

PURPOSE:
The purpose of Delaware County specific readiness plans are prevention, mitigation, and response to a terrorist incident affecting Delaware County.

ASSUMPTIONS:
Terrorist attacks are usually directed at population centers and buildings or facilities that conduct operations for government, transportation, industry, or health care.

Terrorist attacks may or may not be preceded by a warning or threat. Terrorist acts may at first appear to be a non-intentional hazardous materials incident. Terrorist attacks may require a vast response effort from all levels of government. Terrorist attacks may result in large numbers of casualties, including fatalities, physical injuries, and psychological trauma. The attack may include multiple simultaneous sites. It may be accompanied by a second act of sabotage intended to injure or kill emergency response personnel. The use of a chemical or biological agent may not be immediately identified. Recovery may be complicated by the presence of persistent agents, additional threats, extensive physical damages and psychological stress.

SCOPE:
The response to a terrorist incident includes two components, which may operate concurrently or consecutively. These include crisis management and consequence management.

Crisis management involves measures to resolve the hostile situation, investigate, and prepare a criminal case for the prosecution under federal and state law. It includes measures to identify the terrorist, define the threat, secure the area, and prevent the threat from being carried out.

Consequence management involves measures to alleviate the damage, loss, hardship or suffering caused by terrorist emergencies. It includes measures to protect public health and safety and provide emergency relief to affected governments, businesses, and individuals. It also includes restoring essential governmental services.

Delaware County's response to a terrorist incident will be determined by the material involved (firearm, explosive, nuclear, radiological, incendiary, biological, or chemical) and by the authorities, plans and operations that are triggered.

SITUATION:
IDENTIFYING A CRIME SCENE, A HAZMAT SITE, AND A DISASTER AREA

In a terrorist incident, the area of operations is potentially a crime scene, a hazardous materials site and a disaster area. This area could potentially span several local jurisdictions. In order to organize a complex on-scene operation, operational boundaries need to be defined with common terminology and procedures for officials responding to the incident. Operational boundaries may be used to control access to the area, target public information messages, assign operational sectors among responding organizations, and assess potential impact on the population and the environment. The physical location of these boundaries will depend on the type and quantity of hazardous materials involved.

Crime Scene Boundary- defines the crime scene. The crime scene may include the areas that are referred to in technical operations as the working point or the red zone. Access to the crime scene may be restricted by the Federal, State and Local Law Enforcement agencies. Response activities within the crime scene may require special procedures in order to protect evidence collection.

Hazardous Materials Boundary- defines the hazardous materials site, which may be referred to in technical operations as the hot or isolation zones. Depending on the spread of contaminants, the HAZMAT site may include some portion of the crime scene and the surrounding community. Access to the HAZMAT site may be restricted to appropriately trained response personnel wearing protective clothing and using decontamination procedures.

Disaster Boundary- identifies the community at risk. These at risk persons may need to take protective actions such a shelter, evacuation or quarantine. Access to this area may or may not be restricted on the authority of the local health department.

RESPONSE:
Emergency personnel first responding to a terrorist incident must be protected from the hazards that a terrorist incident can produce. Including:

- Mechanical hazard- an item, such as, a gunshot, bomb fragment or shrapnel, that causes trauma.
- Biological hazard- a bacteria, rickettsia, virus, toxin, or fungus that causes disease in individuals or groups of people.
- Thermal hazard- extreme heat or cold causing injury. Such as, burning liquids or metals, or cryogenic materials such as liquid oxygen.
- Chemical hazard-toxic or corrosive substances.
- Radiologic hazard- Alpha, beta, and gamma radiation topically or ingested.
- Asphyxiation hazard- lack of oxygen in the atmosphere.
- Incendiary hazard- exposure to fire or burning material.

Detailed information on emergency responder protection is contained in the Delaware County Comprehensive Emergency Management Plan. An Incident Command Post will be established. Incident Command will be assigned according to the nature of the terrorist act.

1. BIOTERRORISM SPECIFIC READINESS AND RESPONSE

A. Anthrax

1. Description of Agent / Syndrome

a. Etiology

Anthrax is an acute infectious disease caused by *Bacillus anthracis,* a spore forming, and 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 "woolsorter'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.[1]

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 ediastinal lymphadenopathy and hemorrhagic mediastiniti**s.**
- Gram-positive bacilli on blood culture, usually after the first two or three days of illness.
- Treatable in early prodromal stage. Mortality remains 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 hands.
- 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.
- Bloody 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.
- 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 1day to 8 weeks (average 5days), 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, formerly Michigan Biologic Products Institute*) – limited availability.

*Use of trade names and commercial sources is for identification only and does not constitute endorsement by CDC or the U.S. Department of Health and Human Services

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.

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 nonintact 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 only.

c. Patient transport

Standard Precautions should be used for transport and movement of patients with *B.anthracis* infections.

d. Cleaning, disinfection, and sterilization of equipment and environment

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

e. Discharge management

No special discharge instructions are indicated. Home care providers should be taught to use Standard Precautions for all patient care (e.g., dressing changes).

f. Post-mortem care

Standard Precautions should be used for post-mortem care. Standard Precautions include wearing appropriate personal protective equipment, including masks and eye protection, when generation of aerosols or splatter of body fluids is anticipated.[5]

4. Post Exposure Management

a. Decontamination of patients / environment

The risk for re-aerosolization of *B. anthracis* 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 (e.g. 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 contaminated clothing and store in labeled, plastic bags.
- Handling clothing minimally to avoid agitation.
- Instructing patients to shower thoroughly with soap and water (and providing assistance if necessary).
- Instructing personnel regarding Standard Precautions and wearing appropriate barriers (e.g. gloves, gown, and respiratory protection) when handling contaminated clothing or other contaminated fomites.
- Decontaminating environmental surfaces using an EPA-registered, facility-approved sporicidal/germicidal agent or 0.5% hypochlorite solution (one part household bleach added to nine parts water).

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 CDC. Prophylaxis should be initiated upon confirmation of an anthrax exposure (Table 1).

Table 1. Recommended post-exposure prophylaxis for exposure to *Bacillus anthracis*

Antimicrobial Agnet	**Adults**	**Children**
Oral Fluoroquinolones: one of the following		
Ciproflaxacin	500mg twice daily	20-30mg per kg of body mass daily, divided into two doses
Levofloxacin	500mg once daily	Not Recommended
Ofloxacin	400mg twice daily	Not Recommended
If fluoroquinolones are not available or are contraindicated		
Doxycycline	100mg twice daily	5mg per kg of body mass per day divided into two doses

§ Pediatric use of fluoroquinolones and tetracyclines is associated with adverse effects that must be weighed against the risk of developing a lethal disease. If *B. anthracis* exposure is confirmed, the organism must be tested for penicillin susceptibility. If susceptible, exposed children may be treated with oral amoxicillin 40mg per kg of body mass per day divided every 8 hours (not to exceed 500mg, three times daily).

Prophylaxis should continue until *B. anthracis* exposure has been excluded. If exposure is confirmed, prophylaxis should continue for 8 weeks. In addition to prophylaxis, post-exposure immunization with an inactivated, cell-free anthrax vaccine is also indicated following anthrax exposure. If available, post-exposure vaccination consists of three doses of vaccine at 0, 2 and 4 weeks after exposure. With vaccination, post-exposure antimicrobial prophylaxis can be reduced to 4 weeks.

c. Triage and management of large scale exposures / potential exposures

Advance planning should include identification of:

- Sources of prophylactic antibiotics and planning for acquisition on short notice.
- Locations, personnel needs and protocols for administering prophylactic post-exposure care to large numbers of potentially exposed individuals.
- Means for providing telephone follow-up information and other public communications services. Intensive care unit managers will need to consider in advance:
- How limited numbers of ventilators will be distributed in the event of a large number of patients arriving with abrupt pulmonary decompensation.
- How additional ventilators can be obtained.
- In the event of severely limited ventilator availability, whether and when ventilator support will be discontinued for a terminally ill individual.[3,10,11]

5. Laboratory Support and Confirmation

Diagnosis of anthrax is confirmed by aerobic culture performed in a BSL -2 laboratory.

a. Diagnostic samples

Diagnostic samples to obtain include:

- Blood cultures.
- Acute serum for frozen storage.
- Stool culture if gastrointestinal disease is suspected.

b. Laboratory selection

Handling of clinical specimens should be coordinated with local and state health departments, and undertaken in BSL -2 or -3 laboratories. The FBI will coordinate collection of evidence and delivery of forensic specimens to FBI or Department of Defense laboratories.

c. 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. See Delaware County Public Health Nursing Service Policy and Procedure: Collection and Packaging of Clinical Specimens for Select Agent Testing. Advance planning may include identification of appropriate packaging materials and transport media in collaboration with the clinical laboratory at individual facilities.

6. Patient, Visitor, and Public Information

Fact sheets for distribution should be prepared, including explanation that people recently exposed to *B. anthracis* are not contagious, and antibiotics are available for prophylactic therapy along with the anthrax vaccine. Dosing information and potential side effects should be explained clearly. Decontamination procedures, i.e., showering thoroughly with soap and water; and environmental cleaning, i.e., with 0.5% hypochlorite solution (one part household bleach added to nine parts water), can be described.

B. Botulism

1. Description of Agent / Syndrome

a. Etiology

Clostridium botulinum is an anaerobic gram-positive bacillus that produces a potent neurotoxin, botulinum toxin. In humans, botulinum toxin inhibits the release of acetylcholine, resulting in characteristic flaccid paralysis. *C. botulinum* produces spores that are present in soil and marine sediment throughout the world. Foodborne botulism is the most common form of disease in adults. An inhalational form of botulism is also possible. Botulinum toxin exposure may occur in both forms as agents of bioterrorism.

b. Clinical features

Foodborne botulism is accompanied by gastrointestinal symptoms. Inhalational botulism and foodborne botulism are likely to share other symptoms including:

- Responsive patient with absence of fever.
- Symmetric cranial neuropathies (drooping eyelids, weakened jaw clench, difficulty swallowing or speaking).
- Blurred vision and diplopia due to extra-ocular muscle palsies.
- Symmetric descending weakness in a proximal to distal pattern (paralysis of arms first, followed by respiratory muscles, then legs).
- Respiratory dysfunction from respiratory muscle paralysis or upper airway obstruction due to weakened glottis.
- No sensory deficits.

c. Mode of transmission

Botulinum toxin is generally transmitted by ingestion of toxin-contaminated food. Aerosolization of botulinum toxin has been described and may be a mechanism for bioterrorism exposure.

d. Incubation period

- Neurologic symptoms of foodborne botulism begin 12 – 36 hours after ingestion.
- Neurologic symptoms of inhalational botulism begin 24- 72 hours after aerosol exposure.

e. Period of communicability

Botulism is not transmitted from person to person.

2. Preventive Measures

a. Vaccine availability

A pentavalent toxoid vaccine has been developed by the Department of Defense. This vaccine is available as an investigational new drug (contact USAMRIID, 301/619-2833). Completion of a recommended schedule (0, 2, 12 weeks) has been shown to induce protective antitoxin levels detectable at 1-year post vaccination.

b. Immunization recommendations

Routine immunization of the public, including healthcare workers, is not recommended.

3. Infection Control Practices for Patient Management

Symptomatic patients with suspected or confirmed botulism should be managed according to current guidelines.

a. Isolation precautions

Standard Precautions are used for the care of patients with botulism.

b. Patient placement

Patient-to-patient transmission of botulism does not occur. Patient room selection and care should be consistent with facility policy.

c. Patient transport

Standard Precautions should be used for transport and movement of patients with botulism.

d. Cleaning, disinfection, and sterilization of equipment and environment

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

e. Discharge management

No special discharge instructions are indicated.

f. Post-mortem care

Standard Precautions should be used for post-mortem care.

4. Post Exposure Management

Suspicion of even single cases of botulism should immediately raise concerns of an outbreak potentially associated with shared contaminated food. In collaboration with CDC and local /state

health departments, attempts should be made to locate the contaminated food source and identify other persons who may have been exposed. Any individuals suspected to have been exposed to botulinum toxin should be carefully monitored for evidence of respirator compromise.

a. Decontamination of patients / environment

Contamination with botulinum toxin does not place persons at risk for dermal exposure or risk associated with re-aerosolization. Therefore, decontamination of patients is not required.

b. Prophylaxis and post-exposure immunization

Trivalent botulinum antitoxin is available by contacting state health departments or by contacting CDC (404/639-2206 during office hours, 404/639-2888 after hours). This horse serum product has a <9% percent rate of hypersensitivity reactions. Skin testing should be performed according to the package insert prior to administration.

c. Triage and management of large scale exposures / potential exposures

Patients affected by botulinum toxin are at risk for respiratory dysfunction that may necessitate mechanical ventilation. Ventilatory support is required, on average, for 2 to 3 months before neuromuscular recovery allows unassisted breathing. Large-scale exposures to botulinum toxin may overwhelm an institution's available resources for mechanical ventilation. Sources of auxiliary support and means to transport patients to auxiliary sites, if necessary should be planned in advance with coordination among neighboring facilities.

5. Laboratory Support and Confirmation

a. Obtaining diagnostic samples

Routine laboratory tests are of limited value in the diagnosis of botulism. Detection of toxin is possible from serum, stool samples, or gastric secretions. For advice regarding the appropriate diagnostic specimens to obtain, contact state health authorities or CDC (Foodborne and Diarrheal Diseases Branch, 404/639-2888).

b. Laboratory selection

Handling of clinical specimens should be coordinated with local and state health departments. The FBI will coordinate collection of evidence and delivery of forensic specimens to FBI or Department of Defense laboratories.

c. 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. See Delaware County Public Health Nursing Service Policy and Procedure: Collection and Packaging of Clinical Specimens for Select Agent Testing.

6. Patient, Visitor, and Public Information

Fact sheets for distribution should be prepared, including explanation that people exposed to botulinum toxin are not contagious. A clear description of symptoms including blurred vision, drooping eyelids, and shortness of breath should be provided with instructions to report for evaluation and care if such symptoms develop.

C. Plague

1. Description of Agent / Syndrome

a. Etiology

Plague is an acute bacterial disease caused by the gram-negative bacillus *Yersinia pestis,* which is usually transmitted by infected fleas, resulting in lymphatic and blood infections (bubonic and septicemia plague). A bioterrorism-related outbreak may be expected to be airborne, causing a pulmonary variant, pneumonic plague.

b. Clinical features

Clinical features of pneumonic plague include:

- Fever, cough, chest pain.
- Hemoptysis.
- Muco-purulent or watery sputum with gram-negative rods on gram stain.
- Radiographic evidence of bronchopneumonia.

c. Modes of transmission

- Plague is normally transmitted from an infected rodent to man by infected fleas.
- Bioterrorism-related outbreaks are likely to be transmitted through dispersion of an aerosol.
- Person-to-person transmission of pneumonic plague is possible via large aerosol droplets.

d. Incubation period

The incubation period for plague is normally 2 – 8 days if due to fleaborne transmission.
The incubation period may be shorter for pulmonary exposure (1-3 days).

e. Period of communicability

Patients with pneumonic plague may have coughs productive of infectious particle droplets. Droplet precautions, including the use of a mask for patient care, should be implemented until the patient has completed 72 hours of antimicrobial therapy.

2. Preventive Measures

a. Vaccine availability

Formalin-killed vaccine exists for bubonic plague, but has not been proven to be effective for pneumonic plague. It is not currently available in the United States.

b. Immunization recommendations

Routine vaccination requires multiple doses given over several weeks and is not recommended for the general population. Post-exposure immunization has no utility.

3. Infection Control Practices for Patient Management

Symptomatic patients with suspected or confirmed plague should be managed according to current guidelines.

a. Isolation precautions

For pneumonic plague, Droplet Precautions should be used in addition to Standard Precautions.

- Droplet Precautions are used for patients known or suspected to be infected with microorganisms transmitted by large particle droplets, generally larger than in size, that can be generated by the infected patient during coughing, sneezing, talking, or during respiratory-care procedures.
- Droplet Precautions require healthcare providers and others to wear a surgical- type mask when within 3 feet of the infected patient. Based on local policy, some healthcare facilities require a mask be worn to enter the room of a patient on Droplet Precautions.
- Droplet Precautions should be maintained until patient has completed 72 hours of antimicrobial therapy.

b. Patient placement

Patients suspected or confirmed to have pneumonic plague require Droplet Precautions. Patient placement recommendations for Droplet Precautions include:

- Placing infected patient in a private room.
- Cohort in symptomatic patients with similar symptoms and the same presumptive diagnosis (i.e. pneumonic plague) when private rooms are not available.
- Maintaining spatial separation of at least 3 feet between infected patients and others when cohorting is not achievable.
- Avoiding placement of patient requiring Droplet Precautions in the same room with an immunocompromised patient.
- Special air handling is not necessary and doors may remain open.

c. Patient transport

- Limit the movement and transport of patients on Droplet Precautions to essential medical purposes only.
- Minimize dispersal of droplets by placing a surgical-type mask on the patient when transport is necessary.

d. Cleaning, disinfection, and sterilization of equipment and environment

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

e. Discharge management

Generally, patients with pneumonic plague would not be discharged from a healthcare facility until no longer infectious (completion of 72 hours of antimicrobial therapy) and would require no special discharge instructions. In the event of a large bioterrorism exposure with patients receiving care in their homes, home care providers should be taught to use Standard and Droplet Precautions for all patient care.

f. Post-mortem care

Standard Precautions and Droplet Precautions should be used for post-mortem care. [5]

4. Post Exposure Management

a. Decontamination of patients / environment

The risk for re-aerosolization of *Y. pestis* from the contaminated clothing of exposed persons is low. In situations where there may have been gross exposure to *Y. pesti*s, decontamination of skin and potentially contaminated fomites (e.g. clothing or environmental surfaces) may be considered to reduce the risk for cutaneous or bubonic forms of the disease.

The plan for decontaminating patients may include:

- Instructing patients to remove contaminated clothing and storing in labeled, plastic bags.
- Handling clothing minimally to avoid agitation.
- Instructing to patients to shower thoroughly with soap and water (and providing assistance if necessary).
- Instructing personnel regarding Standard Precautions and wearing appropriate barriers (e.g. gloves, gown, face shield) when handling contaminated clothing or other contaminated fomites.
- Performing environmental surface decontamination using an EPA-registered, facility-approved sporicidal/germicidal agent or 0.5% hypochlorite solution (one part household bleach added to nine parts water).

b. Prophylaxis

Recommendations for prophylaxis are subject to change. Up-to-date recommendations should be obtained in consultation with local and state health departments and CDC. Post-exposure prophylaxis should be initiated following confirmed or suspected bioterrorism *Y. pestis* exposure, and for post-exposure management of healthcare workers and others who had unprotected face-to-face contact with symptomatic patients (Table 2).

Table 2. Recommended post-exposure prophylaxis for exposure to Yersinia Pestis.

Antimicrobial Agent	Adults	Children
First Choice		
Doxycycline	100mg twice daily	5mg perkg of body mass per day divided into two doses
Second choice		
Ciprofloxacin	500mg twice daily	20-30mg per kg of body mass daily, divided into two doses.

§ Pediatric use of tetracyclines and flouroquinolones is associated with adverse effects that must be weighed against the risk of developing a lethal disease.

Prophylaxis should continue for 7 days after last known or suspected *Y. pestis* exposure, or until exposure has been excluded. Facilities should ensure that policies are in place to identify and manage health care workers exposed to infectious patients. In general, maintenance of accurate occupational health records will facilitate identification, contact, assessment, and delivery of post-exposure care to potentially exposed healthcare workers.

c. Triage and management of large scale exposures / potential exposures

Advance planning should include identification of sources for appropriate masks to facilitate adherence to Droplet Precautions for potentially large numbers of patients and staff. Instruction and reiteration of requirements for Droplet Precautions (as opposed to Airborne Precautions) will be necessary to promote compliance and minimize fear and panic related to an aerosol exposure.

Advance planning should also include identification of:

- Sources of bulk prophylactic antibiotics and planning for acquisition on short notice.
- Locations, personnel needs and protocols for administering prophylactic post-exposure care to large numbers of potentially exposed individuals.
- Means for providing telephone follow-up information and other public communications services.

5. Laboratory Support and Confirmation

Laboratory confirmation of plague is by standard microbiologic culture, but slow growth and misidentification in automated systems are likely to delay diagnosis. For decisions regarding obtaining and processing diagnostic specimens, contact state laboratory authorities or CDC.

a. Diagnostic samples

Diagnostic samples to obtain include:

- Serum for capsular antigen testing.
- Blood cultures.
- Sputum or tracheal aspirates for Gram's, Wayson's, and fluorescent antibody staining.
- Sputum or tracheal aspirates for culture.

b. Laboratory selection

Handling of clinical specimens should be coordinated with local and state health departments, and undertaken in Bio-Safety Level (BSL) -2 or -3 laboratories.[3] The FBI will coordinate collection of evidence and delivery of forensic specimens to FBI or Department of Defense laboratories.

c. 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. See Delaware County Public Health Nursing Service Policy and Procedure: Collection and Packaging of Clinical Specimens for Select Agent Testing.

6. Patient, Visitor, and Public Information

Fact sheets for distribution should be prepared, including a clear description of Droplet Precautions, symptoms of plague, and instructions to report for evaluation and care if such symptoms are recognized. The difference between prophylactic antimicrobial therapy and treatment of an actual infection should be clarified. Decontamination by showering thoroughly with soap and water can be recommended.

D. Smallpox

1. Description of Agent / Syndrome

a. Etiology

Smallpox is an acute viral illness caused by the variola virus. Smallpox is a bioterrorism threat due to its potential to cause severe morbidity in a non-immune population and because it can be transmitted via the airborne route. A single case is considered a public health emergency. Contact investigations shall be initiated immediately following the determination that an individual has a suspected, probable, or confirmed case of smallpox.

b. Clinical features

Acute clinical symptoms of smallpox resemble other acute viral illnesses, such as influenza. Skin lesions appear, quickly progressing from macules to papules to vesicles.

Other clinical symptoms to aid in identification of smallpox include:

- 2-4 day, non-specific prodrome of fever, myalgias.
- rash most prominent on face and extremities (including palms and soles) in contrast to the truncal distribution of varicella.
- rash scabs over in 1-2 weeks.
- In contrast to the rash of varicella, which arises in "crops," variola rash has a synchronous onset.

c. Mode of transmission

Smallpox is transmitted via both large and small respiratory droplets. Patient-to-patient transmission is likely from airborne and droplet exposure, and by contact with skin lesions or secretions. Patients are considered more infectious if coughing or if they have a hemorrhagic form of smallpox.

d. Incubation period

The incubation period for smallpox is 7-17 days; the average is 12 days.

e. Period of communicability

Unlike varicella, which is contagious before the rash is apparent, patients with smallpox become infectious at the onset of the rash and remain infectious until their scabs separate (approximately 3 weeks).

2. Preventive Measures

a. Vaccine availability

A live-virus intradermal vaccination is available for the prevention of smallpox.

b. Immunization recommendations

Since the last naturally acquired case of smallpox in the world occurred more than 20 years ago, routine public vaccination has not been recommended. **Vaccination against** smallpox does not reliably confer lifelong immunity. Even previously vaccinated persons should be considered susceptible to smallpox.

In the event of a confirmed or highly suspect smallpox case vaccination DCPHNS will follow the CDC ring vaccination plan. (source: CDC guidelines)

1. Persons who were exposed in the initial release of the virus.
   Circle one: Household contacts of case, including family, friends, and persons who work full time in the household.
   Circle two: All named contacts who spent time in the home but who do not live there, all named non-household contacts who spent more than 3 hours with the case patient, all named exposures in the hospital or medical care facility.
   Circle three: All named contacts who spent 1-3 hours with case patient.
   Circle four: All named contacts who spent less than one hour with case patient.
   Circle five: All contacts who spent less than on hour at a designated location.
2. Personnel selected for the direct medical or public health evaluation, care, or transportation of confirmed, probable, or suspect smallpox cases.
3. Laboratory personnel selected for the collection or processing of clinical specimens form confirmed, probable, or suspected smallpox patients.
4. Other persons with increased likelihood of contact with infectious materials from a smallpox patient, Such as, laundry or medical waste handlers for a facility where smallpox patients are admitted.
5. Other groups whose unhindered function is deemed essential to the support of response activities and who are not otherwise involved in patient care activities but who have a reasonable probability of contact with smallpox patients or infectious materials. Such as, law enforcement, emergency response, or military personnel.
6. Because of the potential for greater spread of smallpox in a hospital setting due to aerosolization of the virus from a severely ill patient, consideration should be given to vaccination of all individuals present in the hospital during the time a case was present bur was not isolated in an appropriate manner.
7. Because smallpox is transmitted only by those who are obviously ill with a rash, categories of otherwise essential personnel who are not involved in activities that have a reasonable probability of contact with smallpox patients or infectious materials, such as, firemen, police, and municipal officials, do no require priority vaccination.

3. Infection Control Practices for Patient Management

Symptomatic patients with suspected or confirmed smallpox should be managed according to current guidelines.

a. Isolation precaution

For patients with suspected or confirmed smallpox, both Airborne and Contact Precautions should be used in addition to Standard Precautions.

- Airborne Precautions are used for patients known or suspected to be infected with microorganisms transmitted by airborne droplet nuclei (small particle residue or smaller in size) of evaporated droplets containing microorganisms that can remain suspended in air and can be widely dispersed by air currents.
- Airborne Precautions require healthcare providers and others to wear respiratory protection when entering the patient room. (Appropriate respiratory protection is based

on facility selection policy; must meet the minimal NIOSH standard for particulate respirators, N95).

- Contact Precautions are used for patients known or suspected to be infected or colonized with epidemiologically important organisms that can be transmitted by direct contact with the patient or indirect contact with potentially contaminated surfaces in the patient's care area.
- Contact precautions require healthcare providers and others to:
- Wear clean gloves upon entry into patient room.
- Wear gown for all patient contact and for all contact with the patient's environment. Based on local policy, some healthcare facilities require a gown be worn to enter the room of a patient on Contact Precautions. Gown must be removed before leaving the patient's room.
- Wash hands using an antimicrobial agent.

b. Patient placement

Patients suspected or confirmed with smallpox require placement in rooms that meet the ventilation and engineering requirements for Airborne Precautions, which include:

- Monitored negative air pressure in relation to the corridor and surrounding areas. (Delaware County currently has no negative pressure patient care rooms in the county hospitals).
- 6 – 12 air exchanges per hour.
- Appropriate discharge of air to the outdoors with a HEPA filter, or monitored high efficiency filtration of air prior to circulation to other areas in the healthcare facility, or at least 100 yards from any other occupied building or area.
- A door that must remain closed.

Healthcare facilities without patient rooms appropriate for the isolation and care required for Airborne Precautions should have a plan for transfer of suspected or confirmed smallpox patients to neighboring facilities with appropriate isolation rooms.

Patient placement in a private room is preferred. However, in the event of a large outbreak, patients who have active infections with the same disease (i.e., smallpox) may be cohorted in rooms that meet appropriate ventilation and airflow requirements for Airborne Precautions. Facilities must have water, electricity, heating, cooling, telephone, closed-window ventilation, and controllable access.

Quarantine/Isolation

Quarantine: Forced confinement or restriction of movement for asymptomatic persons at risk for developing smallpox.
Isolation: Forced confinement and physical separation of persons with suspected, probable, or confirmed smallpox.
Site Considerations:
Type C- Contagious Facility
Type C or X- Febrile without a rash

Type R- Asymptomatic in Residential facility

DCPHNS has dedicated a type C facility for placement of smallpox patients all individuals associated with this facility will require vaccination prior to entry. A second facility, the type X facility, will be dedicated for isolation of persons with uncertain diagnoses such as febrile contacts without a rash.

c. Patient transport

- Limit the movement and transport of patients with suspected or confirmed smallpox to essential medical purposes only.
- When transport is necessary, minimize the dispersal of respiratory droplets by placing a mask on the patient, if possible. 5

d. Cleaning, disinfection, and sterilization of equipment and environment

A component of Contact Precautions is careful management of potentially contaminated equipment and environmental surfaces.

- When possible, noncritical patient care equipment should be dedicated to a single patient (or cohort of patients with the same illness).
- If use of common items is unavoidable, all potentially contaminated, reusable equipment should not be used for the care of another patient until it has been appropriately cleaned and reprocessed. Policies should be in place and monitored for compliance.

e. Discharge management

In general, patients with smallpox will not be discharged from a healthcare facility until determined they are no longer infectious. Therefore, no special discharge instructions are required.

f. Post-mortem care

Airborne and Contact Precautions should be used for post-mortem care.

Following prophylactic care, exposed individuals should be instructed to monitor themselves for development of flu-like symptoms or rash during the incubation period (i.e., for 7 to 17 days after exposure) and immediately report to designated care sites selected to minimize the risk of exposure to others.

Facilities should ensure that policies are in place to identify and manage health care workers exposed to infectious patients. In general, maintenance of accurate occupational health records will facilitate identification, contact, assessment, and delivery of post-exposure care to potentially exposed healthcare workers.

g. Triage and management of large scale exposures / potential exposures

Advance planning must involve IC professionals in cooperation with building engineering staff, to identify sites within the facility that can provide necessary parameters for Airborne Precautions.

4. Post Exposure Management

a. Decontamination of patients / environment

- Patient decontamination after exposure to smallpox is not indicated.
- Items potentially contaminated by infectious lesions should be handled using Contact Precautions.

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 CDC. Post-exposure immunization with smallpox vaccine (vaccinia virus) is available and effective. Vaccination alone is recommended if given within 3 days of exposure. Passive immunization is also available in the form of vaccinia immune-globulin (VIG) (0.6ml/kg IM). If greater than 3 days has elapsed since exposure, both vaccination and VIG are recommended. VIG is maintained at USAMRIID, 301/619-2833.

Vaccination is generally contraindicated in pregnant women, and persons with immunosuppression, HIV–infection, and eczema, who are at risk for disseminated vaccinia disease. However, the risk of smallpox vaccination should be weighed against the likelihood for developing smallpox following a known exposure. VIG should be given concomitantly with vaccination in these patients.

Following prophylactic care, exposed individuals should be instructed to monitor themselves for development of flu-like symptoms or rash during the incubation period (i.e., for 7 to 17 days after exposure) and immediately report to designated care sites selected to minimize the risk of exposure to others.

Facilities should ensure that policies are in place to identify and manage health care workers exposed to infectious patients. In general, maintenance of accurate occupational health records will facilitate identification, contact, assessment, and delivery of post-exposure care to potentially exposed healthcare workers.

c. Triage and management of large scale exposures / potential exposures

Advance planning must involve IC professionals in cooperation with building engineering staff, to identify sites within the facility that can provide necessary parameters for Airborne Precautions.

5. Laboratory Support and Confirmation

a. Diagnostic samples to obtain

For decisions regarding obtaining and processing diagnostic specimens, contact state laboratory authorities or CDC.

b. Laboratory selection

Handling of clinical specimens must be coordinated with state health departments, CDC, and USAMRIID. Testing can be performed only in BSL - 4 laboratories. The FBI will coordinate collection of evidence and delivery of forensic specimens to FBI or Department of Defense laboratories.

c. 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, 770/488-710**0. Advance planning may include identification of appropriate packaging materials and transport media in collaboration with the clinical laboratory at individual facilities. See Delaware County Public Health Nursing Service Policy and Procedure: Collection and Packaging of Clinical Specimens for Select Agent Testing.

d. Discharge management

In general, patients with smallpox will not be discharged from a healthcare facility until determined they are no longer infectious. Therefore, no special discharge instructions are required.

e. Post-mortem care

Airborne and Contact Precautions should be used for post-mortem care.

6. Patient, Visitor, and Public Information

Fact sheets for distribution should be prepared, including a clear description of symptoms and where to report for evaluation and care if such symptoms are recognized. Details about the type and duration of isolation should be provided. Vaccination information that details who should receive the vaccine and possible side effects should be provided. Extreme measures such as burning or boiling potentially exposed items should be discouraged.

2. CHEMICAL SPECIFIC READINESS AND RESPONSE

Nerve Agents: Tabun. Sarin. Soman. GF. V X
Signs and symptoms of exposure: Diarrhea, urination, miosis, bronciospasm, vomiting, tearing, salivation/runny nose. Later stages: tightness in chest, jerking and twitching, difficulty in breathing, nausea.

Agents are heavier than air (unless dispersed under pressure). G agents may have a fruity odor. V agents may have a sulfur odor.

Blood Agents: Hydrogen cyanide. cyanogen chloride
Signs and symptoms of exposure: Headaches, strong gasping breaths, loss of consciousness, convulsions, apnea (normal pupil size/no secretions).

Hydrogen cyanide is lighter than air; cyanogen chloride is heavier.

Blister Agents: Mustard. Lewisite.
Signs and symptoms of exposure: Reddening of eyes/ gritty irritation, reddening of skin, severe itching/burning of skin, sore throat/hoarseness and dry cough/nausea/vomiting.

Agents are heavier than air; odor of mustard, onion, or garlic. Lewisite may have odor of geraniums.

Choking Agents: Phosgene. Chlorine
Signs and symptoms of exposure: irritation of eyes, nose, throat, shortness of breath, coughing, frothy secretions, nausea, vomiting, pulmonary edema.

Agents are heavier than air; phosgene has odor of fresh mown hay.

EMERGENCY MEDICAL SERVICES

PRE-HOSPITAL THERAPY FOR CHEMICAL WEAPONS

Chemical	Antidote(adult)	Decontamination (REMOVE CLOTHES)	Other treatments
NERVE AGENT	2-4 mg atropine(IV, IM, or ET), repeat 2 mg until bronchial secretions dry (may require 20 mg)	Copious soap and water in all exposures	Seizing patients 5-10 mg IV or IM Valium
Sulfur Mustard	Supportive care for irritation. Cover eyes for photo-pobia	Copious soap and water in dermal exposures	Oxygen/intubation, bronchodilators
Lewisite	Supportive care	Copious soap and water in dermal	

		exposures	
Cyanide	Supportive care	Copious soap and water in dermal exposures	Oxygen/intubation, Bicarbonate for acidosis
Phosgene	Supportive care	Copious soap and water in dermal exposures	Oxygen/intubation, bronchodilators
Ammonia	Supportive care	Copious soap and water in dermal or ocular exposures	Oxygen/intubation, bronchodilators
Chlorine	Supportive care	Copious soap and water in dermal or ocular exposures	Oxygen/intubation, bronchodilators nebulize bicarbonate (first dilute 1:4)
CN (Mace)	Supportive care	Copious soap and water in dermal or ocular exposures	Oxygen, bronchodilators
CS (tear gas)	Supportive care	Copious soap and water in dermal or ocular exposures	Oxygen, bronchodilators
Capsicum (oleoresin, pepper mace/spray)	Supportive care	Copious soap and water in dermal or ocular exposures	bronchodilators

RESPONSE:

Procedure will follow the ICS system and HAZMAT. The wind direction and weather conditions will determine staging areas. HAZMAT and EMS have protocols and equipment for worker protection.

The FBI has jurisdiction over the area. EMS/fire department or HAZMAT may assume the role of lead agency until such time that Incident Command transfer can be made. A perimeter will be established and the scene will be secured with restricted entry. The initial response protocol provides for the notification of law enforcement.

DECONTAMINATION: Victims

Decontamination is required for a chemical or radiological agent.

An area will be designated for decontamination of victims. To avoid secondary contamination, victims will not be transported or admitted into patient care areas until decontamination is completed. Entry and exit points will be clearly marked with separate flow patterns established for patients and personnel to limit the spread of contamination.

Patient decontamination is accomplished initially by removing the victim's clothing. Clothing should be bagged and labeled for evidence protection. Rinsing the patient with large quantities of water and collecting the decontamination runoff may be necessary depending on the nature of the exposure. Gently scrubbing the skin with soap and a soft brush removes any remaining fat-soluble chemicals and solid materials. In the absence of soap and water, bread and a cloth or

flour and a cloth may be used. If suspected liquid mustard agent is on a patient the agent should be blotted off (not rubbed) to remove. Bathing patients in solutions other than soap (such as bleach) are unnecessary and can be harmful to patients. While DC's goal is to ensure the health of individuals, every effort will be made to preserve the modesty and dignity of patients.

Disinfection is required for a person exposed to a biological agent. The same principles remain for disinfection as with decontamination. Remove clothing. Remove agent from the skin using soap and water.

MASS CARE:

Each hospital will institute its normal disaster plan with special consideration for decontamination and ventilation sites. Although many patients will be decontaminated at the scene, there is the potential for many patients to arrive without proper decontamination. To prevent secondary contamination, it is essential to quickly identify those persons arriving at a facility prior to decontamination. These persons should be decontaminated prior to entering the care facility. The four in County Hospitals are:

Delaware Valley Hospital
Margaretville Memorial Hospital
O'Connor Hospital
The Hospital- Sidney

TREATMENT:

General medical treatment guidelines are as follows: (more specific information can be found at web site www.cdc.gov/ncehdemilarticles/initialtreat.htm)
It is estimated that an initial dose of 20 mg of atropine and 2 gm of pralidoxime will be required per patient.

For pulmonary agents, treatment involves supportive care. Nebulized sodium bicarbonate (2%) may be beneficial after chlorine exposures and corticosteroids may be of some benefit after phosgene or nitrogen oxide exposures.

For cyanide, treatment involves supportive care and the cyanide antidote package. (Obtained from the NYSDOH) This package contains nitrites (amyl and sodium) if intravenous access has been obtained skip the inhaled amyl nitrite. Sodium thiosulfate can also serve as an antidote. Antidotes should be administered as rapidly as possible as ACLS practices are generally not successful for severely poisoned people.

For vesicants, treatment involves supportive care. Anti-arsenicals can be used for systemic lewisite (arsenical) toxicity. Patients should be monitored for signs of vesicles or pulmonary toxicity from minutes after exposure up to 24 hours depending on the exposure parameters.

For nerve agents or pesticides, treatment involves a mixture of the antimuscarinic (atropine) along with an enzyme regenerator (pralidoxine-Protopam also called 2PAM). Use atropine at a dose required to dry bronchial secretions (doses can be quite high) and pralidoxime at 500 mg/hr

intravenously (in adults). Patients should be monitored for signs of cholinergic excess and treated using increased doses of atropine or pralidoxime in conjunction with supportive care.

ENVIRONMENTAL:

Emergency Management and HAZMAT will coordinate all decontamination and clean-up of chemical materials. Emergency Management will notify Delaware County Public Health Nursing Service of any chemical incident. Delaware County Public Health Nursing Service will then notify the District Office in Oneonta.

3. RADIOLOGICAL SPECIFIC READINESS AND RESPONSE

The release of radioactive materials is considered a method that may be used by terrorist to cause harm, panic and disruption of daily lives to a community. The first possible scenario in which a terrorist attacks a nuclear power plant is not a threat in Delaware County.

A Terrorist attack that involves radiological materials could affect Delaware County in several ways:

- An attack on a medical or industrial setting or carrier, i.e. a truck or train carrying radioactive materials through the county.
- Detonation of an explosive mixed with radioactive materials.
- Detonation of a nuclear weapon.

RESPONSE:

As with other emergency situations DC will operate utilizing the Incident Command System during a radiological event.
Radiation guidelines include the principles of time, distance, shielding and quantity. Shorten the length of time in the radiation field, use a rotating team of EMS personnel to respond to scene, utilize barriers to shield against radiation.

Immediate response includes evacuating those in the radiation field and those at risk, shielding indoors and issuing stable iodine tablets. Subsequent response includes: partnering with Oneonta District Office to control food and water contamination, evaluate the extent of radioactive release and relocation of nearby residents as needed.
Long-term decontamination may be necessary.

DECONTAMINATION: Victims

Decontamination is required for a chemical or radiological agent. An area will be designated for decontamination of victims. To avoid secondary contamination, victims will not be transported or admitted into patient care areas until decontamination is completed. Entry and exit points will be clearly marked with separate flow patterns established for patients and personnel to limit the spread of contamination.

Patient decontamination is accomplished initially by removing the victim's clothing. Clothing should be bagged and labeled for evidence protection. Rinsing the patient with large quantities of water and collecting the decontamination runoff may be necessary depending on the nature of the exposure. Gently scrubbing the skin with soap and a soft brush removes any remaining fat-soluble chemicals and solid materials. In the absence of soap and water, bread and a cloth or flour and a cloth may be used. If suspected liquid mustard agent is on a patient the agent should be blotted off (not rubbed) to remove. Bathing patients in solutions other than soap (such as bleach) are unnecessary and can be harmful to patients. While DC's goal is to ensure the health of individuals, every effort will be made to preserve the modesty and dignity of patients.

Disinfection is required for a person exposed to a biological agent. The same principles remain for disinfection as with decontamination. Remove clothing. Remove agent from the skin using soap and water.

MASS CARE: (see Annex B MASS CARE)

Each County Hospital will institute its disaster plan.

Irradiation of the whole body or some specific body part does not constitute a medical emergency even if the amount of radiation received is high. Contamination accidents must be considered medical emergencies since they might lead to internal contamination and subsequent incorporation. Persons with internal contamination (eating or drinking) should be given treatment to avoid subsequent incorporation of radioactive materials. The NYSDOH is reviewing the role of potassium iodide (KI) to prevent uptake of radioactive iodide into victims' thyroid glands. DCPHNS will seek direction in current treatment modalities from the NYSDOH.