

Anthrax Fact Sheet

I. Etiology

Anthrax is an acute infectious disease caused by *Bacillus Anthracis*. Humans can become infected through skin contact, ingestion, or inhalation of spores from infected animals, animal products, or a bioterrorist attack. **Person-to-person transmission of inhalational disease does not occur.**

II. Clinical Features

Human anthrax infection can occur in 3 forms: pulmonary, cutaneous, or gastrointestinal. Of these forms, pulmonary anthrax is associated with bioterrorism exposure to aerosolized spores. Clinical features from each form include:

Pulmonary

- Non-specific prodrome of flu-like symptoms – headache, fever, tiredness, cough, mild chest discomfort.
- Possible brief interim improvement.
- 2-4 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 2 or 3 days of illness.
- Direct exposure to vesicle secretions of cutaneous anthrax lesions may result in secondary cutaneous infection.

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.
- Bloody diarrhea, hematemesis.
- Gram positive bacilli on blood culture, usually after the first 2 or 3 days of illness.
- Usually fatal after progression to toxemia and sepsis.
- **Anthrax is treatable in early stages and less treatable after onset of breathing problems. Death usually occurs within 24-36 hours after onset of severe symptoms.**

III. Mode of Transmission

As a bioterrorism agent, it could be delivered as an aerosol. Transmission modes include:

- Inhalation of spores
- Cutaneous contact with spore-contaminated materials.
- Ingestion of contaminated food.

IV. Incubation period

The incubation period ranges from 1 day to 8 weeks (average 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.

V. Period of Communicability

Person-to-person transmission is very unlikely – but direct contact with skin lesions may result in cutaneous infection.

VI. Infection Control Practices for Patient Management

Symptomatic patients with suspected or confirmed infections will be managed according to current guidelines specific to their disease state.

A. Isolation precautions

Standard Precautions are used for the care of patients. Standard Precautions include the use of PPE to avoid direct contact with a patient's body fluids.

Handwashing – Hands are washed after touching blood, body fluids, excretions, secretions, or items contaminated with such body fluids, whether or not gloves are worn. Hands are washed immediately after gloves are removed and between patient contact. Either plain or antimicrobial-containing soaps may be used.

Clean, non-sterile gloves are worn when touching blood, body fluids, excretions, secretions, or items contaminated with body fluids. Clean gloves are donned 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 care area.

Gowns are worn if there is any chance of splashing of body fluids.

- B. Private room placement 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.
- D. Principles of Standard Precautions will be applied for the management of patient care equipment and for environmental control. If there are questions, please call the Infection Control Department at 55110.
- E. Patient linen is 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 properly.
- F. The patient's waste is considered contaminated.
- G. No special discharge instructions are needed; however, home care providers should be taught to use Standard Precautions.
- H. Post-mortem care – Standard Precaution should be used for post-mortem care.

VII. Post Exposure Management

Contamination of patient / environment

The risk for re-aerosolization is low. In situations where the threat of gross exposure to B. anthracis spores exist, cleansing of skin and potentially contaminated fomites (e.g., clothing or environmental surfaces) may be necessary to reduce the risk for cutaneous and

gastrointestinal forms of disease. The plan for decontaminating patients exposed to anthrax includes the following:

- Instructing patients to remove contaminated clothing and place in contaminated bags.
- Handling clothing minimally to avoid agitation.
- Instructing personnel regarding Standard Precautions and wearing appropriate barriers (e.g., gloves, gown and respiratory protection) when handling contaminated clothing or other contaminated formites.
- Decontaminating environmental surfaces using a 0.5% hypochlorite solution (one part bleach added to nine parts water).
- Exposure
If exposed to an aerosol, clothing should be removed and placed in a plastic bag for incineration. A cleansing shower will remove the organism. Surfaces that the aerosol may have settled on shall be cleaned with a bleach solution (one part bleach to nine parts water).