West Virginia Department of Health and Human Resources Information for Physicians – Anthrax

These guidelines are provided to assist health care providers in assessing and reassuring the "worried well" and others who may be seeking care based upon concern about anthrax. There have been **NO** known anthrax exposures in West Virginia since the events of 11 September, and historically, the last reported human cases of anthrax occurred in our state in 1947.

Asymptomatic patient WITHOUT known exposure

- Provide reassurance about the rarity of anthrax infection without known exposure.
- Explain that there is no screening test available for the detection of anthrax disease in asymptomatic persons.
- Discourage requests for nasal swab and blood serum tests. These tests are for epidemiologic investigation of *populations* in the setting of confirmed or suspected exposure. They have no utility in the management of *individual patients*.
- Recommend that the patient return IF they become ill with symptoms that would prompt them to seek medical care under normal circumstances.
- Do not prescribe even a short course of antibiotics to asymptomatic patients to allay their fears.

Asymptomatic patient with contact with powdery material

- Since September 11, 2001, the West Virginia Department of Health and Human Resources has tested hundreds of "suspicious" powders, letters, and other substances. None have tested positive for anthrax. Nonetheless, every incident should be evaluated individually.
- If the exposure was associated with a threat, the incident should be reported to the FBI.
- The local health department in collaboration with the Infectious Disease Epidemiology Program can assist with recommendations on patient management.

Asymptomatic patient WITH highly likely or verified exposure

- Any allegation of exposure to BT agents should be reported immediately to the local health department and the FBI.
- Consult the local health department to perform an individual risk assessment. If high risk status is confirmed, begin prophylactic medication (see Post-Exposure Prophylaxis Recommendations below).
- Although no screening tests are available for detection of anthrax in an asymptomatic *individual*, public health officials may request a nasal swab and/or a serum sample to assist in epidemiological evaluation of an exposed or potentially exposed *population*.

Post-Exposure Prophylaxis (PEP) Recommendations (MMWR, 2001; 50:893)

Patient	Initial Therapy	Duration
Adults (including immunocompromised persons)*	Ciprofloxacin 500 mg po BID **OR** Doxycycline 100 mg po BID	60 days
Children	Ciprofloxacin 10-15 mg/kg po Q 12 H (not to exceed 1 gram per day) **OR** Doxycycline > 8 yrs and > 45 kg: 100 mg po BID > 8 yrs and ≤ 45 kg: 2.2 mg/kg po BID ≤ 8 yrs: 2.2 mg/kg po BID **OR** Amoxicillin 80 mg/kg/day PO divided Q 8 H; maximum 500 mg/dose IF *B. anthracis* is known to be susceptible**	60 days

* The antimicrobial of choice for initial prophylactic therapy among asymptomatic pregnant women exposed to *B. anthracis* is ciprofloxacin, 500 mg po BID for 60 days. In instances in which the specific *B. anthracis* strain has been shown to be penicillin-sensitive, prophylactic therapy with amoxicillin, 500 mg TID for 60 days may be considered. Doxycycline should be used with caution in asymptomatic pregnant women and only when contraindications are present to other appropriate drugs (MMWR, 2001; 50:960).

** Amoxicillin is an option for antimicrobial prophylaxis of children and pregnant women when *B. anthracis* is known to be susceptible to penicillin (MMWR, 2001; 50:1014).

Patients with "flu-like" symptoms

- In the early stages, anthrax presents with an influenza-like prodrome. In an individual patient, no one symptom, symptom complex, or laboratory test reliably distinguishes anthrax from influenza in the early stages; however:
  - Anthrax is rare in patients without known exposure.
  - In a *population*, patients with influenza are more likely to have rhinorrhea, and patients with anthrax are more likely to have shortness of breath and/or nausea or vomiting (see table below).
  - All recent patients in the U.S. with anthrax presented with abnormalities on chest X-ray. In some cases, abnormalities were subtle.
  - Any cluster of severe respiratory illness should always raise suspicion of a bioterrorist event, especially if it is occurring in previously healthy individuals or out-of-season. The local health department should be alerted to begin investigation immediately.
- Sensitivity and specificity of rapid tests for influenza range from 45% to 90%, and 60% to 95%, respectively. Rapid tests confirmed with culture are *very* useful for determining if influenza is circulating in specific *populations (e.g. a group of patients with similar symptoms in a nursing home, physician's office, or emergency room)*. Rapid tests for influenza may have limited utility in diagnosis of influenza in *individual patients*. However, knowing whether influenza is circulating in the community is extremely useful in diagnosis of influenza-like illness. Contact your local health department or Infectious Disease Epidemiology Program at 304-558-5358 (8:30 to 5:00) or pager 1-888-882-5235 at any time for information on influenza surveillance.
- Nasal swabs and/or serum samples for anthrax testing should *not* be used for screening purposes.
- Do not prescribe an antibiotic for viral illness.
- For additional information on influenza in West Virginia, see the Infectious Disease Epidemiology Program's influenza website at www.wvdhhr.org/bph/oehp/sdc/flu_surv.htm
- For additional information on diagnosis of influenza and anthrax, see MMWR, 2001; 50(44):984-6.

Symptoms and signs of inhalational anthrax, laboratory-confirmed influenza, and influenza-like illness (ILI) from other causes (MMWR, 2001; 50 (44):984-6)

Symptom/Sign	Inhalational anthrax (n=10)	Laboratory-confirmed influenza	ILI from other causes
Elevated temperature	70%	68% - 77%	40% - 73%
Fever or chills	100%	83% - 90%	75% - 89%
Fatigue/malaise	100%	75% - 94%	62% - 94%
Cough (minimal or non-productive)	90%	84% - 93%	72% - 80%
Shortness of breath	80%	6%	6%
Chest discomfort or pleuritic chest pain	60%	35%	23%
Headache	50%	84% - 91%	74% - 89%
Myalgias	50%	67% - 94%	73% - 94%
Sore throat	20%	64% - 84%	64% - 84%
Rhinorrhea	10%	79%	68%
Nausea or vomiting	80%	12%	12%
Abdominal pain	30%	22%	22%

Patients with signs and symptoms compatible with anthrax – CDC Interim Guidelines (MMWR, 2001; 50:941)

Inhalational Anthrax:

History of exposure, or occupational/environmental risk with two to five day illness of:

Symptoms
- Fever with or without chills
- Sweats, often drenching
- Fatigue, malaise
- Cough (usually nonproductive), shortness of breath
- Chest discomfort, pleuritic pain
- Nausea, vomiting, diarrhea, abdominal pain
- Headache, myalgias
- Sore throat

Signs
- Fever

NO ⇨

- Observe closely
- Provide antimicrobial prophylaxis if exposure is confirmed

YES ⇩

Initial evaluation
- Obtain white blood cell count (WBC), chest radiograph (CR), and blood cultures
  - WBC: normal to elevated; neutrophilia with bands
  - CR: >Mediastinal widening
    > Pleural effusion
    >Pulmonary infiltrate
- Consider chest computerized tomography (CT) if CR is normal
- Consider rapid diagnostic testing for influenza
- Notify public health authorities

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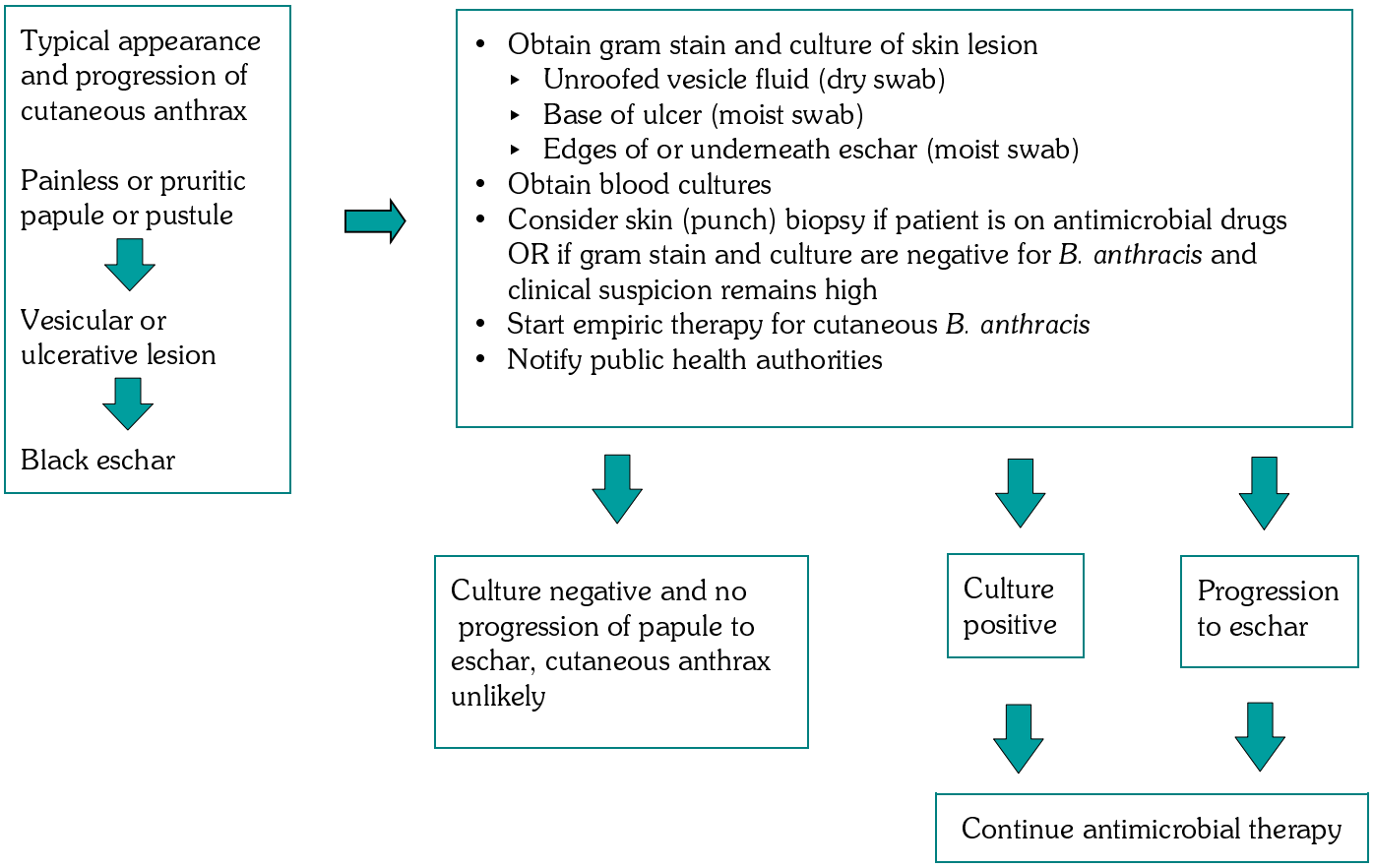
WBC, CR, CT within normal limits and patient mildly ill
- Observe closely for development of new symptoms
- Await blood cultures
- Initiate or continue prophylaxis (if exposure confirmed)

Either WBC, CR, CT abnormal or patient moderately or severely ill
- Begin antimicrobial therapy
- If pleural effusion present, obtain fluid for gram stain and culture, polymerase chain reaction, and cell block for immunohistochemistry
- If meningeal signs or altered mental status present, perform lumbar puncture
- Other diagnostic tests (consult IDEP)

Cutaneous Anthrax:



Treatment of anthrax

- Initial treatment of inhalational or GI anthrax requires ciprofloxacin or doxycycline IV and one or two other antimicrobial agents in children, adults, and pregnant women; including the immunocompromised.
- Susceptibility testing of the isolate is imperative.
- Consultation with an infectious disease specialist is advised.
- After recovery, treatment may be continued with oral doxycycline or ciprofloxacin for a total of 60 days of therapy.
- Oral ciprofloxacin or doxycycline are the options for initial treatment of uncomplicated cutaneous anthrax. If there is systemic involvement, edema, or if the lesions are on the head or neck, intravenous therapy is required. If the isolate is known to be penicillin-sensitive, treatment may be completed with amoxicillin.
- See MMWR, 2001;50:909-919 and MMWR, 2001; 50:1014-1016 for additional details.

For more information or to report a confirmed or suspect case of anthrax or a cluster of severe respiratory disease, contact your local health department or the Infectious Disease Epidemiology Program at 304-558-5358 or pager 1-888-882-5235.