

## How to Arrange for Anthrax Testing New York State Department of Health

A. If it is determined that the patient meets the definition of a **SUSPICIOUS CASE OF CUTANEOUS ANTHRAX**, preferably by a dermatologist or other experienced clinician, the specimens detailed below should be collected. Laboratory testing at the CDC will be prioritized for suspicious cases only. After consultation with the NYSDOH, the diagnostic specimens from your facility may be sent to NYSDOH's laboratory, Wadsworth Center.

**For suspicious cases of cutaneous anthrax, recommended specimens include:**

- 1. Culture and gram stain of skin lesion or skin biopsy for testing at your local routine microbiology laboratory:**
  - a. Synthetic (non-cotton) swab with non-wooden stick for culture and gram stain of material:
    1. Unroofed vesicle fluid (dry swab)
    2. Base of ulcer (moist swab)
    3. Edges of or underneath eschar (moist swab)
  - b. Sterile punch biopsy specimen should be sent in sterile saline for culture
  - c. Send to routine hospital laboratory. If suspicious *Bacillus* species \* is identified, contact your Local Health Unit and NYSDOH immediately.
- 2. Consider two skin biopsies for PCR, culture and immunohistochemical staining at CDC if patient is on antimicrobial drugs or if gram stain and culture are negative for *B. anthracis* and clinical suspicion remains high.**

**(If only one biopsy is obtained, it should be placed in formalin).**

  - a. One biopsy specimen in formalin, kept at room temperature, for histopathology and immunohistochemical staining.
  - b. One biopsy specimen in a sterile cup, frozen at -70 C or placed on dry ice, for culture and PCR.
- 3. Acute serum for ELISA testing for *B. anthracis* at CDC (Ideally within 5 days of illness onset)**
  - c. Collect ~5 ml of whole blood in a serum separator tube, refrigerate or keep at room air
  - d. Spin down as soon as possible
  - e. After spinning, separate serum and freeze the tube of serum at -70 C or place on dry ice
- 4. Convalescent serum for ELISA testing for *B. anthracis* at CDC (14-21 days after acute sera)**
  - e. Collect ~5 ml of whole blood in a serum separator tube, refrigerate or keep at room air
  - f. Spin down as soon as possible
  - g. After spinning, separate serum and freeze the tube of serum at -70 C or place on dry ice.
- 5. Blood for Gram stain and culture:**

Send to routine hospital laboratory. If suspicious *Bacillus* species\* is identified, contact NYSDOH immediately

**If the patient is a suspicious case of cutaneous anthrax and is febrile or hospitalized, please also collect:**

- 6. Whole blood for PCR: (red top tube)**

---

\* Suspicious *Bacillus* species: large, Gram-positive rods with spores; non-motile and non-hemolytic *Bacillus* species on preliminary culture.

**Please be sure to completely and clearly label all specimens with the following information:**

- **PATIENT'S FIRST AND LAST NAME**
- **DATE OF BIRTH**
- **DATE OF COLLECTION OF SPECIMEN**
- **SITE OF SPECIMEN COLLECTION**
- **METHOD OF PRESERVATION (formalin, paraffin, frozen)**

**REMINDER:** Specimens will NOT be accepted by the NYSDOH Wadsworth Center unless the clinician has reported and discussed the case with NYSDOH.

**B.** If it is determined that the patient is **LESS LIKELY TO BE A CASE OF CUTANEOUS ANTHRAX**, i.e., the patient has skin lesions in which cutaneous anthrax is on the differential diagnosis, BUT the clinician does not strongly suspect it AND/OR there is low or no risk exposure history AND/OR no existing laboratory evidence of *Bacillus* infection, **referral to a dermatologist** is recommended. Laboratory testing for cases that are less suspicious should be performed using local medical laboratories.

**C.** If it is determined that the patient is **A SUSPICIOUS CASE OF INHALATIONAL ANTHRAX**, the diagnostic workup should include the tests listed below:

1. **Gram stain and routine blood cultures**
2. **White blood cell count with differential**
3. **Chest X-ray and/or chest CT to assess for mediastinal and hilar adenopathy**
4. **Consider rapid diagnostic testing for influenza**
5. **If meningeal signs are present, gram stain and culture of CSF.**
6. **If pleural fluid is present, gram stain and culture of pleural fluid**

Specimens that should be submitted to the NYSDOH Wadsworth Laboratory include:

1. **Cultures positive for suspicious *Bacillus* species\***
2. **Whole blood for PCR -(red top tube)**
3. **Acute serum for ELISA testing for *B. anthracis* at CDC** (Ideally within 5 days of illness onset)
  - a. Collect ~5 ml of whole blood in a serum separator tube, refrigerate or keep at room air
  - b. Spin down as soon as possible
  - c. After spinning, separate serum and freeze the tube of serum at -70 C or place on dry ice
4. **Convalescent serum for ELISA testing for *B. anthracis* at CDC** (14-21 days after acute sera)
  - a. Collect ~5 ml of whole blood in a serum separator tube, refrigerate or keep at room air
  - b. Spin down as soon as possible
  - c. After spinning, separate serum and freeze the tube of serum at -70 C or place on dry ice.

**Please be sure to completely and clearly label all specimens with the following information:**

- **PATIENT'S FIRST AND LAST NAME**
- **DATE OF BIRTH**
- **DATE OF COLLECTION OF SPECIMEN**
- **SITE OF SPECIMEN COLLECTION**
- **METHOD OF PRESERVATION (formalin, paraffin, frozen)**

**TEST RESULTS**

Any positive test results will be reported to the physician immediately. Negative results will be sent to the hospital or physician by mail.

---

\* Suspicious *Bacillus* species: large, Gram-positive rods with spores; non-motile and non-hemolytic *Bacillus* species on preliminary culture.