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Anthrax (  
Bacillus  
spp.)  
2025 Case Definition  
Anthrax (  
Bacillus  
spp.)  
2025 Case Definition  
NOTE:  
A surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently across reporting jurisdictions. Surveillance case definitions are not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient’s health needs.  
CSTE Position Statement(s)  
24-ID-01  
Subtype(s)  
Cutaneous anthrax  
Ingestion anthrax  
Inhalation anthrax  
Injection anthrax  
Welder's anthrax  
Background  
Anthrax has been a notifiable condition since 1944  
1  
and has historically been caused by the organism  
B. anthracis  
. Advances in whole genome sequencing (WGS) are redefining the  
Bacillus  
taxonomic nomenclature and additional  
Bacillus  
species that can produce anthrax toxins are being identified through advanced molecular methods. Although  
B. anthracis  
is a select agent and thus falls under the reporting requirements of both the National Select Agent Program  
2  
and the Laboratory Response Network (LRN), CDC also conducts case surveillance to identify anthrax caused by both  
B. anthracis  
and other  
Bacillus  
species.  
Clinical Criteria  
Death of an unknown cause with organ involvement consistent with anthrax;  
OR  
In the absence of another more likely etiology,  
At least one of the following specific signs and symptoms:  
Evidence of pleural effusion  
Evidence of mediastinal widening or hemorrhagic mediastinal lymphadenopathy on imaging  
Blood in the CSF  
Painless or pruritic papular or vesicular lesion or eschar, may be surrounded by edema or erythema  
Pneumonia  
OR  
At least two of the following non-specific signs and symptoms:  
Abdominal pain  
Abdominal swelling  
Abnormal lung sounds  
Altered mental status  
Ascites  
Cervical lymphadenopathy/Swelling of the neck  
Coagulopathy  
Cough  
Diarrhea  
Difficulty swallowing  
Dyspnea  
Edema  
Fever  
Headache  
Hemoptysis  
Hypotension  
Lymphadenopathy  
Meningeal signs  
Nausea/vomiting  
Sore throat  
Tachycardia  
Tachypnea  
Laboratory Criteria  
Confirmatory Laboratory Evidence:  
Culture and identification of  
B. anthracis  
or  
Bacillus  
spp. expressing anthrax toxins from clinical specimens by Laboratory Response Network (LRN);  
3, 4  
OR  
Evidence of a four-fold rise in antibodies to protective antigen (PA; one of the anthrax toxins) between acute and convalescent sera collected two-four weeks apart using quantitative anti-PA IgG ELISA testing in an unvaccinated person;  
OR  
Evidence of a four-fold change in antibodies to protective antigen (one of the anthrax toxins) in paired convalescent sera collected two-four weeks apart using quantitative anti-PA IgG ELISA testing in an unvaccinated person;  
OR  
Detection of  
B. anthracis  
or anthrax toxin genes by the LRN-validated polymerase chain reaction and/or sequencing in clinical specimens collected from a normally sterile site (such as blood or CSF) or lesion of other affected tissue (skin, pulmonary, reticuloendothelial, or gastrointestinal);  
OR  
Detection of lethal factor (LF) in clinical serum specimens by LF mass spectrometry.  
Presumptive Laboratory Evidence:  
Demonstration of  
B. anthracis  
antigens in tissues by immunohistochemical staining;  
OR  
Gram stain demonstrating Gram-positive rods, square-ended, in pairs or short chains;  
OR  
Positive result on an anthrax test with established performance in a CLIA-accredited laboratory  
^.  
Note: The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.  
^  
For example, the RedLine Alert test,  
http://tetracore.com/bacillus-anthracis- detection/Tetracore\_RedLine\_Alert\_Test.pdf.  
Epidemiologic Linkage  
Exposure to environment, food, animal, materials, or objects that is/are suspected or confirmed to be contaminated with  
B. anthracis  
or anthrax toxin-producing  
Bacillus  
spp.;  
OR  
Exposure to the same environment, food, animal, materials, place of occupation, or objects as another person who has laboratory-confirmed anthrax.  
Criteria to Distinguish a New Case from an Existing Case  
A new case should be enumerated when:  
Person not previously enumerated as a case;  
OR  
Person previously enumerated as a case  
AND  
newly meets confirmatory lab criteria after completing treatment for their previous infection  
AND  
had a new exposure to an anthrax-toxin producing  
Bacillus  
spp.  
Case Classification  
Suspect  
Meets vital records criteria only.  
Probable  
Meets the clinical criteria  
AND  
meets presumptive laboratory evidence,  
OR  
Meets vital records criteria  
AND  
meets presumptive laboratory evidence,  
OR  
Meets the clinical criteria  
AND  
meets epidemiologic linkage criteria.  
Confirmed  
Meets the clinical criteria  
AND  
meets confirmatory laboratory evidence,  
OR  
Meets vital records criteria  
AND  
meets confirmatory laboratory evidence.  
Other Criteria  
Vital Records Criteria  
A person whose death certificate lists anthrax as a cause of death or a significant condition contributing to death.  
Case Classification Comments  
The following provides guidance for health departments to use for optional further sub-classification of anthrax cases. The type of anthrax case depends on the clinical manifestations that present as an illness or during a post-mortem examination per the clinical presentations listed below. All case classifications (i.e., confirmed, probable, and suspect) for anthrax may be further sub-classified by type of anthrax.  
Cutaneous anthrax:  
Usually begins as a small, painless, pruritic papule on an exposed surface, which progresses through a vesicular stage into a depressed black eschar; the eschar is often surrounded by edema or erythema and may be accompanied by lymphadenopathy. Non-specific signs and symptoms include fever and localized edema.  
Ingestion anthrax:  
Presents as one of two sub-types:  
Oropharyngeal:  
When anthrax spores germinate in the oropharynx, a mucosal lesion may be observed in the oral cavity or oropharynx. Signs and symptoms are non-specific and include sore throat, dysphagia, swelling of the neck, fever, fatigue, shortness of breath, abdominal pain, and nausea/vomiting; the signs and symptoms may resemble a viral respiratory illness. Cervical lymphadenopathy, ascites, and altered mental status may be observed.  
Gastrointestinal:  
When anthrax spores germinate in the lower gastrointestinal tract, signs and symptoms are mainly non-specific and include abdominal pain, nausea, vomiting or diarrhea (either of which may contain blood), abdominal swelling, fever, fatigue, and headache are also common. Altered mental status and ascites may be observed.  
Inhalation anthrax:  
Often described as a biphasic illness. Specific signs and symptoms include pleural effusion or mediastinal widening, or hemorrhagic mediastinal lymphadenopathy. Early nonspecific signs and symptoms of inhalation anthrax include fever and fatigue. Localized thoracic signs and symptoms such as cough, chest pain, and shortness of breath follow, as may non-thoracic signs and symptoms such as nausea, vomiting, abdominal pain, headache, diaphoresis, and altered mental status. Lung sounds are often abnormal.  
Injection anthrax:  
Usually presents as a severe soft tissue infection manifested as significant edema or bruising after an injection. No eschar is apparent, and pain is often not described. Nonspecific signs and symptoms such as fever, shortness of breath, or nausea are sometimes the first indication of illness. Occasionally patients present with meningeal or abdominal involvement. A coagulopathy is not unusual.  
Welder’s anthrax:  
Usually presents as a pneumonia that may be accompanied by hemoptysis or pleural effusion. Unlike inhalation anthrax, mediastinal widening is not common. Non-specific signs and symptoms include fever or chills, cough, dyspnea, and hemoptysis. Lung sounds are often abnormal.  
Additional considerations:  
1) Signs of systemic involvement from the dissemination of either the bacteria and/or its toxins can occur with all types of anthrax and include fever or hypothermia, tachycardia, tachypnea, hypotension, and leukocytosis. One or more of these signs are usually present in patients with ingestion anthrax, inhalation anthrax, injection anthrax, and welder’s anthrax and may be present in up to a third of patients with cutaneous anthrax.  
2) Anthrax meningitis: may complicate any form of anthrax and may also be a primary manifestation. Primary signs and symptoms include fever, headache (which is often described as severe), nausea, vomiting, and fatigue. Meningeal signs (e.g., meningismus), altered mental status, and other neurological signs such as seizures or focal signs are usually present. Most patients with anthrax meningitis have CSF abnormalities consistent with bacterial meningitis and is often described as hemorrhagic.  
References  
Centers for Disease Control and Prevention. (n.d.). Anthrax nationally notifiable time periods. Retrieved from  
https://ndc.services.cdc.gov/conditions/anthrax/  
Federal Select Agent Program. Select Agents and Toxins List. 2014;  
https://www.selectagents.gov/SelectAgentsandToxinsList.html  
. Accessed January 17, 2017.  
Centers for Disease Control and Prevention (CDC), American Society for Microbiology (ASM), & Association of Public Health Laboratories (APHL). (2010).  
Sentinel level clinical microbiology laboratory guidelines for suspected agents of bioterrorism and emerging infectious diseases: Bacillus anthracis  
. Retrieved January 27, 2017, from  
http://www.asm.org/images/pdf/Clinical/Protocols/anthrax.pdf  
Association of Public Health Laboratories (APHL). (2016).  
APHL and ASM interim guidance: Addition of Bacillus cereus biovar anthracis as a Tier 1 select agent  
. Retrieved January 27, 2017, from  
https://www.aphl.org/programs/preparedness/Documents/B-cereus-biovar-anthracis\_Interim-Guidance.pdf  
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Anthrax (  
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NNDSS receives and shares case data from state, local, and territorial health departments to help public health monitor, control, and prevent serious diseases.  
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