

**ANTHRAX****IMMEDIATE NOTIFICATION****EPIDEMIOLOGY PROGRAM**

Event Name:	ANTH
Event Time Period:	1 year
Clinical Description (CDC 2024):	<p>Death of an unknown cause with organ involvement consistent with anthrax;</p> <p>OR</p> <p>In the absence of another more likely etiology,</p> <p>At least one of the following specific signs and symptoms:</p> <ul style="list-style-type: none"><li>• Evidence of pleural effusion</li><li>• Evidence of mediastinal widening or hemorrhagic mediastinal lymphadenopathy on imaging</li><li>• Blood in the CSF</li><li>• Painless or pruritic papular or vesicular lesion or eschar, may be surrounded by edema or erythema</li><li>• Pneumonia</li></ul> <p>OR</p> <p>At least two of the following non-specific signs and symptoms:</p> <ul style="list-style-type: none"><li>• 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</li></ul> <p>Note: Additional information is available on the position statement (<a href="#">link</a>)</p>
Vital Records Criteria (CDC 2024):	<ul style="list-style-type: none"><li>• A person whose death certificate lists anthrax as a cause of death or a significant condition contributing to death.</li></ul>
Epidemiologic Linkage Criteria (CDC 2024):	<ul style="list-style-type: none"><li>• Exposure to environment, food, animal, materials, or objects that is/are suspected or confirmed to be contaminated with <i>B. anthracis</i> or anthrax toxin-producing <i>Bacillus</i> spp.; OR</li><li>• Exposure to the same environment, food, animal, materials, place of occupation, or objects as another person who has laboratory-confirmed anthrax.</li></ul>

CDC Event Classification (2024):	<i>Confirmed</i>	<p>Meets the clinical criteria AND meets confirmatory laboratory evidence, OR meets vital records criteria AND meets confirmatory laboratory evidence:</p> <ul style="list-style-type: none"> <li>• Culture and identification of <i>B. anthracis</i> or <i>Bacillus</i> spp. expressing anthrax toxins from clinical specimens by Laboratory Response Network (LRN); OR</li> <li>• 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</li> <li>• 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</li> <li>• Detection of <i>B. anthracis</i> 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</li> <li>• Detection of lethal factor (LF) in clinical serum specimens by LF mass spectrometry.</li> </ul>
	<i>Probable</i>	<p>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:</p> <ul style="list-style-type: none"> <li>• Demonstration of <i>B. anthracis</i> antigens in tissues by immunohistochemical staining; OR</li> <li>• Gram stain demonstrating Gram-positive rods, square-ended, in pairs or short chains; OR</li> <li>• Positive result on an anthrax test with established performance in a CLIA-accredited laboratory.</li> </ul>
	<i>Suspect</i>	Meets vital records criteria only.
Massachusetts Event Classification:	<i>Follows CDC event classification.</i>	

**ANTHRAX (continued)**

Report Type	Test Type	Source	Result	New event or beyond report period?	Data Entry
Laboratory report <b>OR</b> Boston Reporting Card	Culture	Clinical Specimen	<i>Bacillus anthracis</i>	Yes	New event SUSPECT
				No	Same event
Select:	Microorganism: Pt: xxx: Nom: Culture				
Laboratory report <b>OR</b> Boston Reporting Card	IFA	Clinical Specimen	<i>Bacillus anthracis</i>	Yes	New event SUSPECT
				No	Same event
Select:	Bacillus anthracis Ag: ACnc: Pt: xxx: Ord: IF				
Laboratory report <b>OR</b> Boston Reporting Card	Quick ELISA Anthrax PA OR Anti-PA antibodies	Clinical Specimen	Positive	Yes	New event SUSPECT
				No	Same event
Select:	Bacillus anthracis anti-PA Ab: Titr: Pt: Ser: Qn: ELISA				
Laboratory report <b>OR</b> Boston Reporting Card	Lethal Factor	Serum	Positive	Yes	New event SUSPECT
				No	Same event
Select:	Bacillus anthracis lethal factor: ACnc: Pt: xxx: Qn: Mass Spectrometry				
Laboratory report <b>OR</b> Boston Reporting Card	Stain	Clinical specimen	Gram positive rod	Yes	New event SUSPECT
				No	Same event
Select:	Microscopy: Prld: Pt: xxx: Nom: xxx stain				
Laboratory report <b>OR</b> Boston Reporting Card	Malachite green Stain	Clinical specimen	Positive	Yes	New event SUSPECT
				No	Same event
Select:	Spore identification: Prld: Pt: xxx: Nom: Malachite green stain				
Laboratory report <b>OR</b> Boston Reporting Card	PCR	Clinical specimen	Positive	Yes	New event SUSPECT
				No	Same event
Select:	Bacillus anthracis DNA: ACnc: Pt: xxx: Ord: Probe.amp.tar				
Laboratory report <b>OR</b> Boston Reporting Card	RedLine Alert Test	Clinical specimen	Positive	Yes	New event SUSPECT
				No	Same event
Select:	Bacillus anthracis Ag: ACnc: Pt: xxx: Ord: IF				

**ANTHRAX (continued)**

Report Type	Test Type	Source	Result	New event or beyond report period?	Data Entry
Laboratory report <b>OR</b> Boston Reporting Card	Anthrax EITB Reaction	Serum	Positive	Yes	<b>DO NOT ENTER</b>
				No	Same event

**Data entry note:**

Results where a *Bacillus* bacteria is identified and is being sent to the State Lab to rule out anthrax should not be entered. *Bacillus* is a very common bacteria and the great majority of the time it will not be *anthracis*. These results should only be entered if a specific result of *Bacillus anthracis* is identified. If there are any questions, please speak with the Epi Liaison.