

# CLINICAL LABORATORY SUSPECTED BIOTERRORISM (BT) EVENT MANAGEMENT GUIDELINE

Washington State Clinical Laboratory Advisory Council

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## Covert Event

## Overt Event

- LRN Sentinel Laboratory\*
- Unusual number of clinical specimens received from patients with similar symptoms
  - Preliminary laboratory findings suggestive of a BT agent (see back page)
  - Receipt of clinical specimen to rule out (R/O) BT agents
  - Unusual isolates from more than one patient

Clinical laboratory notified of increased level of suspicion

Notification from public health authorities, infection control, local media, etc. of potential bioterrorist threat

Customize the following telephone numbers for **YOUR** laboratory

**Telephone Numbers for YOUR Facility:**

Laboratory Director \_\_\_\_\_

Laboratory Supervisor \_\_\_\_\_

Lead Technologist \_\_\_\_\_

Infection Control \_\_\_\_\_

Local Health Jurisdiction \_\_\_\_\_

**Alert & inform as appropriate:**  
 >Lab Director  
 >Supervisor  
 >Infection Control  
 >Medical Director

**Inform** clinicians of pertinent laboratory results and status of confirmatory testing

**Inform local health jurisdiction (LHJ) officials**

**Preserve and secure specimen/sample/all culture plates**  
  
 Wait for instructions from LHJ for follow-up steps

**Local Health Jurisdictions will:**

- > Inform and involve Washington State Department of Health (DOH) Epidemiology staff and the DOH Public Health Laboratories to determine where suspect samples are to be sent for further analysis
- > Advise LRN Sentinel Laboratory on -which LRN Reference\*\* laboratory to send the specimen/sample
  - how to send the sample and special packing instructions
  - include initial laboratory work-up

\* **LRN Sentinel Laboratory:** Laboratories that perform blood and/or CSF cultures to RULE OUT a BT agent.  
 \*\* **LRN Reference Laboratory:** Laboratories specifically authorized by the Centers for Disease Control and Prevention to perform testing to RULE IN the BT agent.

ENVIRONMENTAL SAMPLES: DO NOT ACCEPT any type of non-clinical specimen such as powders, other suspicious substances, or packages. Contact your local health jurisdiction. REFER all phone calls from people regarding environmental specimens to local law enforcement or to your local health jurisdiction.

## LRN SENTINAL LABORATORY REFERENCE TABLE

Agent	Culture Methods	Recovery Time	Colony Morphology	Gram Stain Morphology	Presumptive ID	Action
<b>Bacillus anthracis</b> From: vesicle, sputum, CSF, stool, blood, tissue	<b>BAP:</b> 35-37°C 5-10% CO <sub>2</sub> <b>CHOC:</b> 35-37°C 5-10% CO <sub>2</sub> <b>MAC:</b> 35-37°C ambient air	8-24 hours	<b>BAP/CHOC:</b> Round w/regular edges, flat to slightly convex w/ground glass appearance, often w/comma shaped projections from colony edge which peaks when touched, non-hemolytic <b>MAC:</b> No growth	Large gram + rods often in short chains. Encapsulated w/sub-terminal spores (no swelling)	1)Ground glass appearance, no hemolysis on BAP; 2)No growth on MAC; 3)Large Gram + rods; 4) Catalase + 5)Non-motile	Refer to laboratory designated by the local health jurisdiction
<b>Francisella tularensis</b> From: blood, sputum, tissue, lymph node, or lesion aspirate	<b>BAP:</b> 35-37°C 5-10% CO <sub>2</sub> <b>CHOC:</b> 35-37°C 5-10% CO <sub>2</sub> <b>MAC:</b> 35-37°C ambient air <b>Cystine supplemented agar (CHAB):</b> 35-37°C 5-10% CO <sub>2</sub> <b>Thioglycollate broth:</b> 35-37°C 5-10% CO <sub>2</sub>	24-48 hrs, hold up to 10 days	<b>BAP:</b> Scant to no growth, may grow at first, but fails to grow with subsequent passage. <b>CHOC/CHAB:</b> Grey-white opaque usually too small to be seen at 24 hrs. At 48 hrs. usually 1-2 mm, white to grey to bluish grey, opaque, flat entire edge, smooth and shiny; <b>MAC:</b> No Growth	Tiny poorly counterstaining Gram - coccobacillus	1) Scant to no growth on BAP after 48 hrs. 1-2 mm grey white colonies on CHOC after 48 hrs. 2) No growth on MAC. 3) Tiny pleomorphic faintly staining Gram – coccobacillus. 4) Oxidase – 5) Catalase - or weakly + 6)Beta-lactamase + 7) no satellite growth.	Refer to Laboratory designated by the local health jurisdiction
<b>Yersinia pestis</b> From: blood, sputum, tissue, lymph node aspirate	<b>BAP:</b> 35-37°C 5-10% CO <sub>2</sub> <b>CHOC:</b> 35-37°C 5-10% CO <sub>2</sub> <b>MAC:</b> 35-37°C ambient air (Incubation at 25-28°C can aid in isolating <i>Y. pestis</i> from a contaminated sample.)	24-48 hrs, hold up to 7 days	<b>BAP/CHOC:</b> Grey-white, translucent colonies usually too small to see at 24 hrs. After 48 hrs, 1-2 mm, grey-white to slightly yellow and opaque. At 48-72 hrs, colonies have raised fried-egg or hammered copper appearance. Little to no hemolysis. <b>MAC:</b> Small non-lactose fermenting colonies.	Gram - rods mostly in single cells or pairs and in short chains in liquid media.	1)Pinpoint colonies at 24 hrs on SBA 2)Non-lactose fermenter may not be visible on MAC at 24 hrs 3)Gram – rods 4)Oxidase – 5)Indole – 6)Urease – 7) Catalase + 8) Motility – at 25°C	Refer to Laboratory designated by the local health jurisdiction
<b>Brucella sp.</b> From: blood, joint or abdominal fluid, tissue (spleen, liver abscess), bone marrow	<b>BAP:</b> 35-37°C 5-10% CO <sub>2</sub> <b>CHOC:</b> 35-37°C 5-10% CO <sub>2</sub> <b>MAC:</b> 35-37°C ambient air	24-48 hrs, hold up to 7 days	<b>BAP/CHOC:</b> Pinpoint colonies at 24 hrs; easily visible as white non-hemolytic colonies at 48 hrs. <b>MAC:</b> No growth.	Tiny gram – coccobacillus that stain faintly	1)Pinpoint colonies at 24 hrs easily visible at 48 hrs on BAP 2)No growth on MAC 3) Gram – coccobacillus that stain faintly 4) Oxidase + 5)Catalase + 6)Urease +	Refer to Laboratory designated by the local health jurisdiction
<b>Burkholderia pseudomallei &amp; mallei</b> From: blood, sputum, tissue (biopsies, abscess aspirates), bone marrow, wound swabs, urine	<b>BAP:</b> 35-37°C ambient/CO <sub>2</sub> <b>CHOC:</b> 35-37°C ambient/CO <sub>2</sub> <b>MAC:</b> 35-37°C ambient/CO <sub>2</sub>	24 hrs, hold up to 5 days	<b>B. mallei</b> <b>BAP/CHOC:</b> Smooth grey, translucent colonies in 48 hrs without pigment. <b>MAC:</b> Colonies may or may not grow. If present, they will be pinpoint at 48 hrs.  <b>B. pseudomallei</b> <b>BAP/CHOC:</b> Small, smooth creamy colonies in 24-28 hrs. Colonies gradually change to dry wrinkled colonies. Non-hemolytic <b>MAC:</b> Good growth	Gram – coccobacillus or small rods	1)BAP: poor growth at 24 hrs; better growth of grey, translucent colonies w/out pigment or hemolysis at 48 hrs. 2)Gram – coccobacillus or small rods 3)Indole – 4)Catalase +	Refer to Laboratory designated by the local health jurisdiction
<b>Clostridium botulinum</b> From: Feces, tissue, wound exudates, gastric contents, serum, food	Contact County Health Department. All testing will be conducted at the State Public Health Laboratory	Testing performed at the State Public Health Laboratory	Testing performed at the State Public Health Laboratory	Testing performed at the State Public Health Laboratory	Testing performed at the State Public Health Laboratory	Refer to Laboratory designated by the local health jurisdiction

References:

**Sentinel Level Clinical Laboratory Protocols for Suspected Biological Threat Agents and Emerging Infectious Diseases 2013.**; American Society for Microbiology website: <http://www.asm.org/index.php/issues/sentinel-laboratory-guidelines>