

WV Office of Laboratory Services (OLS)

THREAT-PREPAREDNESS AND BIOTERRORISM RESPONSE LABORATORY



“I HAVE A SAMPLE, NOW WHAT DO I DO?”

CLINICAL AND ENVIRONMENTAL
SPECIMEN SUBMISSION



**CDC CATEGORY LIST
FOR
BIOLOGICAL DISEASES**

CDC Category List for Biological Diseases

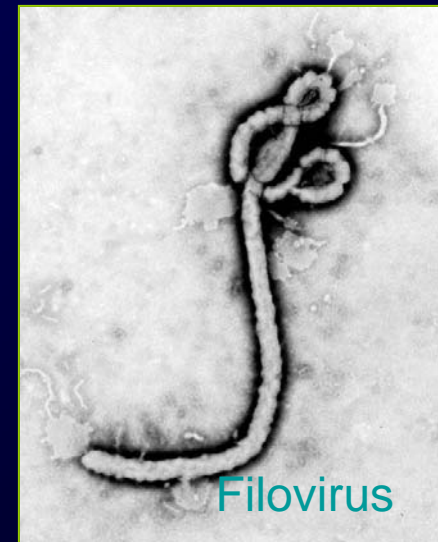
- Category A

High-priority agents include organisms that pose a risk to national security because they:

- can be easily disseminated or transmitted from person to person;
- result in high mortality rates and have the potential for major public health impact;
- might cause public panic and social disruption; and
- require special action for public health preparedness.

CDC Category List for Biological Diseases

- Category A
 - *Bacillus anthracis* - Anthrax
 - *Clostridium botulinum* toxin
 - *Yersinia pestis* - Plague
 - Variola major virus - Smallpox
 - *Francisella tularensis* - Tularemia
 - Viral Hemorrhagic Fevers



CDC Category List for Biological Diseases

- **Category B**

Second highest priority agents include those that are:

- moderately easy to disseminate; and
- result in moderate morbidity rates and low mortality rates.

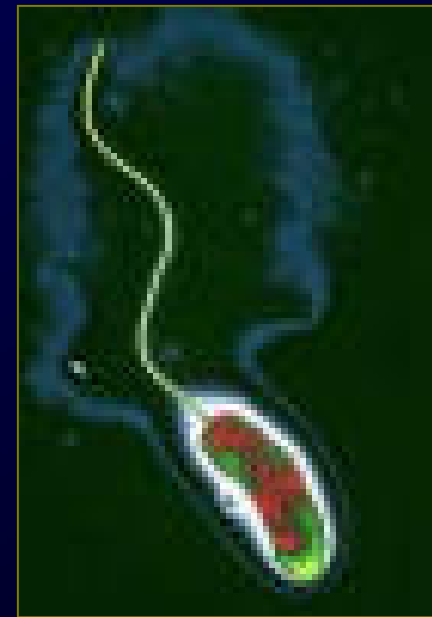
- **Category C**

Third highest priority agents include emerging pathogens.

CDC Category List for Biological Diseases

- Category B

- *Brucella spp.* - Brucellosis
- *Staphylococcal enterotoxin B*
- *Coxiella burnetii* – Q Fever
- Ricin toxin
- *Rickettsia prowazekii* – Typhus Fever
- VEE and EEE
- Water Safety Threats
- Food Safety Threats



Vibrio cholerae

The logo for the Laboratory Response Network (LRN) is contained within a white rectangular area with a dark blue border. At the top, the letters 'LRN' are rendered in a large, bold, dark blue font with a white outline. Below this, a dark blue horizontal bar contains the text 'LABORATORY RESPONSE NETWORK' in white, uppercase, sans-serif font. At the bottom of the white area, the phrase 'PARTNERS IN PREPAREDNESS' is written in a bold, dark blue, sans-serif font.

LRN

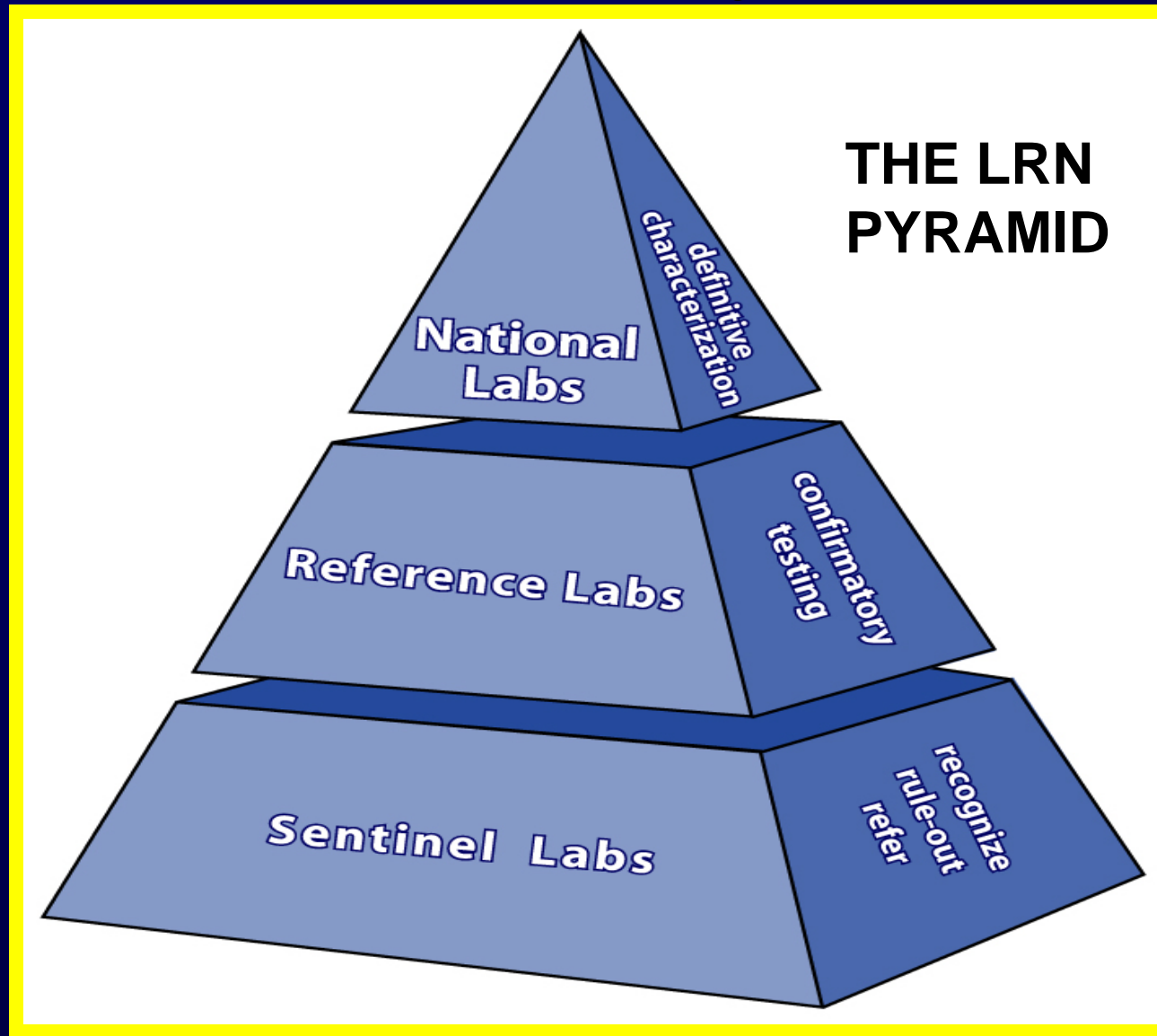
LABORATORY RESPONSE NETWORK

PARTNERS IN PREPAREDNESS

The Laboratory Response Network

- Network supports response to all kinds of public health emergencies, but especially detection and response to BT.
- Includes both public and private labs.
- Labs test according to consensus protocols.
- Protocols developed by the CDC.
- Timely and accurate testing and reporting.
- Linked with local, state, and federal agencies.
- Supported by CDC and FBI.

LRN Laboratory Levels



LRN Safety & Proficiency Adequate to...

National Labs
Work at BSL-4

Confirm, Validate and Archive.
Perform high level characterization.
Probe for universe of agents.

Reference Labs
Work at BSL-2/3

Perform confirmatory testing. Isolate.
Identify. **Rule-in** and **Refer**.

Sentinel Labs
Work at BSL-2

Detect early (presumptive cases). **Recognize Rule-out**
or **Refer**.

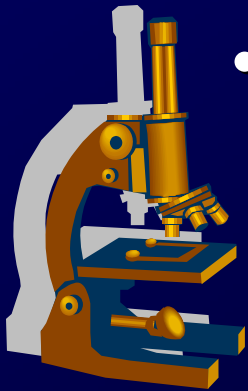
* BSL = Bio Safety Level

Services Offered by The WV Office of Laboratory Services (OLS)

- Presumptive and confirmatory testing for the organisms most likely to be utilized as an agent in a bioterrorism event.
 - *Bacillus anthracis*: Anthrax
 - *Francisella tularensis*: Tularemia
 - *Yersinia pestis*: Plague
 - *Brucella spp.*: Brucellosis
- A variety of tests are utilized ranging from simple staining tests to complex molecular tests.

Services Offered by The WV Office of Laboratory Services (OLS)

- Presumptive testing (PCR): 4 - 6 hours
 - Molecular tests are NOT confirmatory tests
- Confirmatory testing (culture): 24+ hours
 - Depends on the growth rate of the organism
 - Anthrax: 24 hours
 - Tularemia & Brucellosis : 24 – 48 hours
 - Plague: 48 - 72 hours



Time, obviously, is a very critical factor in the confirmation of a select agent of bioterrorism

Types of Specimens

Environmental Specimens

- Virtually anything
 - ex. threat letters, powder, food, etc. etc. etc.
- Submitted by law enforcement personnel or LHD.
 - State and local police, FBI, USPS, CST, RRT, etc.

Clinical Specimens

- Obtained from a patient with characteristic symptoms.
- Submitted by Sentinel labs for confirmation.



**CLINICAL SPECIMEN
SUBMISSION**

Clinical Specimens



- Commercial and hospital labs may make presumptive identification of a select agent of Bioterrorism.
- For organisms suspected to be select agents the specimen is sent on to the WV State PHL (OLS) for confirmation.
- The WV State PHL may make definitive identification or send the specimen to another lab in the LRN or to the CDC.

Clinical Specimens

Clinical specimens from suspected bioterrorism-related cases should be submitted to the confirmation labs through the **Laboratory Response Network** channels.

Follow your hospital's Threat and Emergency Response Plan - www.asm.org/Policy/index.asp?bid=520.

Notify the **Laboratory Director** and the **Infection Control Officer** in advance that the specimen may contain a Bioterrorism agent.

Clinical Specimen Submission

MUST CONTACT:

- OLS TP & BT Response Lab – specimen approval,
- WVOES - EOC message number for tracking, and
- Local Health Department and WV IDEP.

Clinical Specimen Submission

Collect specimen in accordance with **Clinical Specimen Selection for Agents of Bioterrorism Guidelines**.

Chain-of-Custody requirements met through normal hospital practices.

Required Forms – submit a “**Suspected Bioterrorism Agent Clinical Specimen Submission Form**” with each clinical specimen.

Clinical Specimen Submission

Submit each specimen using **FedEx Priority Overnight** shipping.

Follow the packaging requirements in accordance with the **IATA dangerous goods regulations** for transport of biological agents of human disease.

You must include “**ATTN: THREAT-PREPAREDNESS & BIOTERRORISM RESPONSE SECTION**” in the address on the outside of the package.



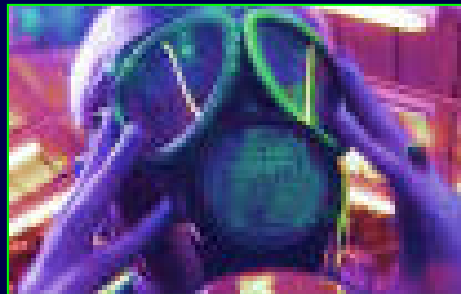
ENVIRONMENTAL SPECIMEN SUBMISSION

Environmental Specimens

- Rapid field testing may be performed: RAMP, TetraCore, Guardian.
- CDC has not yet endorsed any rapid field tests for BT agents.
- OK for screening but NOT for confirmation - common for these tests to report a false positive and negatives.
- Specimens must always also be tested at Public Health Laboratories for investigation, definitive result and confirmation.

Environmental Specimen Submission

ALL Suspected BT Environmental Specimens



**MUST CONTACT
LOCAL LAW ENFORCEMENT
LOCAL HEALTH DEPARTMENT**

Specimen Credibility Confirmation

- For **ALL** suspected BT Environmental specimens, **MUST** follow the **“Threat Assessment and Notification Procedure for Suspect Bioterrorist Events”** guidelines
 1. Local LE, OES, and LHD initially determine credibility
 - *If determined to be credible then...
 2. Conference Call to confirm credibility
 - WVBPH Division of Threat Preparedness
 - Infectious Disease Epidemiology Program (IDEP)
 - WV Division of Homeland Security (WVOES)
 - OLS TP & BT Lab
 - FBI or Postal Inspector (if necessary)

Specimen Submission Guidelines

- If the specimen is determined to be credible
 - MUST then:
 - 1) Have Division of Homeland Security assign an EOC message number (for tracking purposes).
 - 2) Notify OLS TP & BT Response Section
 - During regular hours: 1 hour prior to submission
 - During after hours: 2 hours prior to submission
 - 3) Ensure that local OES, local HD, LE, IDEP, WVOES and all appropriate agencies have **ALL** been notified.

Specimen Submission Guidelines

– Specimen Packaging

- Only **one specimen** per inner bag
- Triple bagged and evidence tape

– Forms

- Environmental Specimen Submission form
- Chain-of-Custody

Specimen Submission Guidelines

– Size **Very Important**

- Environmental sampling for **> 10 H x 22 W x 15 D inches**
- Use only Dacron synthetic swabs
- 4 swabs should be collected

– Time

- Submitted within **1 week** of date of collection

Specimen Submission Guidelines

- Screening and Packaging/Transporting of Specimens
 - Explosives/explosive devices
 - Radiation
 - Chemical hazards
 - Documentation
- Triage of Specimens at WVOLS
 - **High Priority - IMMEDIATELY (24/7)**
 - Intermediate Priority - working hours
 - Low Priority - DO NOT SUBMIT



TP & BT Response Lab Results

- Test results are ONLY given to the following:
 - Specimen submitter listed on submission form.
 - WV IDEP, the WV Division of Homeland Security, and the LHD.
- The TP & BT Response Lab will call with results and fax a report to the submitting lab and LHD.
- Positive confirmation test – results will be disseminated:
 - By OLS, WV IDEP, WV OES, and LHD
 - To all appropriate agencies.
 - Includes reporting results to the CDC and FBI.

The WV OLS

Threat Preparedness & Bioterrorism Response Laboratory

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How to Reach Us

- Office of Laboratory Services (OLS)
 - Phone: (304) 558-3530 (M-F 8:00am-5:00pm)
- Phone Extensions
 - Dr. Andrea M. Labik: ext. 2110
 - OLS Director and TP & BT Supervisor
 - TP & BT Laboratory: ext. 2301
 - Emergency (24/7/365) Pager: (304) 361-9080
 - FAX: (304) 558-0895

ANY QUESTIONS???



