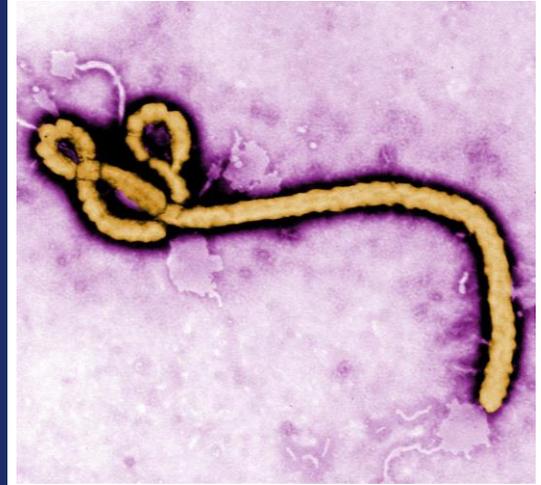


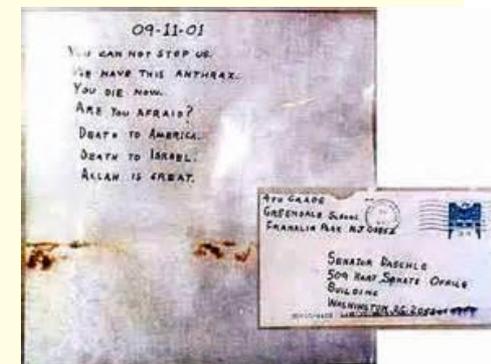
# EBOLA LABORATORY TESTING IN WEST VIRGINIA



Lisa Wallace  
Bioterrorism Laboratory Program Manager  
Regional Ebola Training  
June 25, 2015

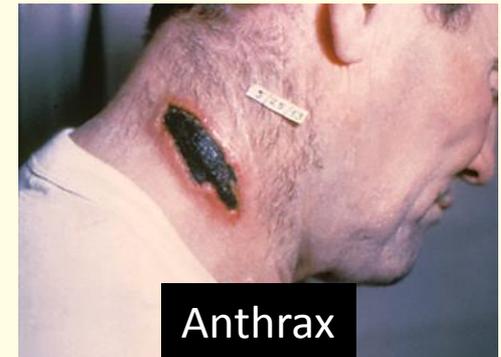
# Bioterrorism Response Laboratory

- **Biosafety Level (BSL-3) Laboratory**
- **LRN Reference Laboratory**
- **Test Environmental Samples (White Powders)**
- **Test Clinical Samples for Select Agents**
- **Develop & Validate Molecular (PCR) Methods**
- **Provide Sentinel Laboratory Training**



# What is a Select Agent?

- **Biological agents and toxins that, the federal government has determined, could pose a severe threat to public health and safety.**
- **Examples:**
  - Bacillus anthracis - Anthrax
  - Clostridium botulinum toxin – Botulism
  - Yersinia pestis – Plague
  - Variola major virus – Small Pox
  - Francisella tularensis – Tularemia



- **Person under investigation (PUI)**
  - Elevated body temperature or subjective fever or symptoms, including severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage; and an epidemiologic risk factor within the 21 days before the onset of symptoms



# When to Collect a Specimen

- **Was the patient exposed to the Ebola virus?**
- **Onset of symptoms is <3days, later specimen may be needed**
- **Prior to obtaining specimen from PUI:**
  - Contact State Lab and DIDE
  - Consultation with CDC prior to sample testing



- **Appropriate Personal Protective Equipment (PPE)**
  - Refer to [Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus in U.S. Hospitals, Including Procedures for Putting On and Removing](#)



- **Preferred Specimen (duplicate samples)**
  - Adults – 4mL whole blood
  - Pediatric – 1mL whole blood
  - Do not submit specimens preserved in heparin tubes



# Specimen Collection and Transport

## Guidance for Collection, Transport, and Submission of Specimens for Ebola Virus Testing in the United States



### NOTIFICATION & CONSULTATION

**Hospitals should follow** their state and/or local health department procedures for notification and consultation for Ebola testing requests.

### WHEN SPECIMENS SHOULD BE COLLECTED FOR EBOLA TESTING



**Ebola virus is detected in blood** only after the onset of symptoms, usually fever. It may take up to 3 days after symptoms appear for the virus to reach detectable levels. Virus is generally detectable by real-time PCR from 3 to 10 days after symptoms appear.



**Ideally, specimens should be taken** when a symptomatic patient reports to a healthcare facility and is suspected of having an exposure to Ebola. However, if the onset of symptoms is <3 days, a later specimen may be needed to completely rule-out Ebola virus, if the first specimen tests negative.

### PREFERRED SPECIMENS FOR EBOLA TESTING

**A minimum volume of 4 mL** of whole blood preserved with EDTA is preferred but whole blood preserved with sodium polyanethol sulfonate, citrate, or clot activator can be submitted for Ebola testing.

**Specimens should be shipped** at 2-8°C or frozen on cold-packs. Do not submit specimens in glass containers to CDC. Do not submit specimens preserved in heparin tubes.



**Specimens other than blood** may be submitted after consult with CDC.



# Specimen Collection and Transport

## DIAGNOSTIC TESTING FOR EBOLA VIRUS

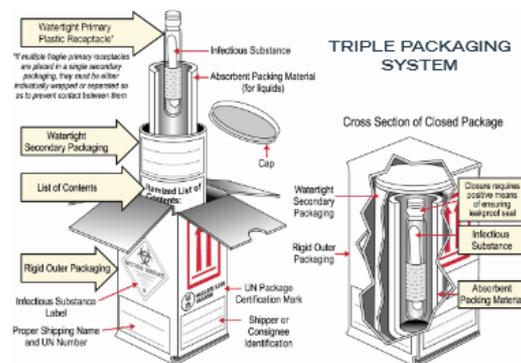
Real-time PCR testing for Ebola virus is available at more than 50 Laboratory Response Network (LRN) laboratories located throughout the United States. LRN laboratories are currently using an FDA-approved Emergency Use Authorization assay to detect the Ebola virus (species *Zaire ebolavirus*). Samples that test positive using this assay are considered presumptive positive for Ebola Zaire RNA by real-time PCR and should be submitted to CDC for additional evaluation.



## TRANSPORTING SPECIMENS WITHIN THE HOSPITAL / INSTITUTION

In compliance with 29 CFR 1910.1030, specimens should be placed in a durable, leak-proof secondary container for transport within a facility. To reduce the risk of breakage or leaks, do not use any pneumatic tube system for transporting suspected Ebola virus specimens.

## PACKAGING & SHIPPING CLINICAL SPECIMENS



Specimens collected for Ebola virus testing should be packaged and shipped without attempting to open collection tubes or aliquot specimens.

Specimens for shipment should be packaged following the basic triple packaging system that consists of a primary sealable container wrapped with absorbent material, secondary container (watertight, leak-proof), and an outer shipping package.

State guidelines may differ and state or local health departments should be consulted before shipping. Ebola virus is classified as a Category A infectious substance by the Department of Transportation (DOT). Specimens from persons under investigation for Ebola or from patients confirmed to have Ebola virus disease should be packaged and shipped as Category A infectious substances.

Packing and shipping Category A infectious substances must be performed by people trained and certified in compliance with DOT or International Air Transport Association requirements. For guidance on packaging and shipping, refer to [Guidance for Collection, Transport and Submission of Specimens for Ebola Virus Testing in the United States](#) and the DOT Hazardous Materials Information Center at 1-800-467-4922.

INFORMATION ON SHIPPING & TRACKING IS AVAILABLE AT

[www.cdc.gov/vhf/ebola/healthcare-us/laboratories/index.html](http://www.cdc.gov/vhf/ebola/healthcare-us/laboratories/index.html)



# Specimen Transport Within Facility

- **Personal Protective Equipment (PPE)**
  - Site-specific risk assessment
  - Plan a route
  - Transport containers
- Decontamination
  - Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus



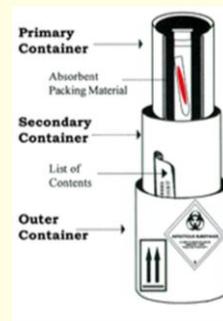
# Specimen Transport to Sites Outside the Facility

- Suspect samples that may contain Ebola virus must be packaged and shipped Category A
- Packaging and shipping by trained and certified personnel
  - DOT compliant or International Air Transport Association (IATA)
  - IATA required recertification every 2 years

- Avoid mishaps



- Packaging of specimen should follow basic triple package system
  - Primary container
  - Secondary container
  - Outer container



- **Category A infectious substance**
  - Definition – A pathogen (infectious substance) capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals.
- **2 methods of transportation for Category A infectious substances**
  - FedEx only (UN2814)
  - Courier service (USDOT)



- **Important items to remember**
  - Triple packaging
  - Primary receptacle watertight (must include absorbent material)
  - Secondary packaging watertight
  - List of contents
  - Rigid outer packaging
  - Infectious Substance Label, Class 6
  - Proper Shipping Name and UN number
  - UN Package Certification Mark
  - Shipper or Consignee Identification
  - Shippers Declaration

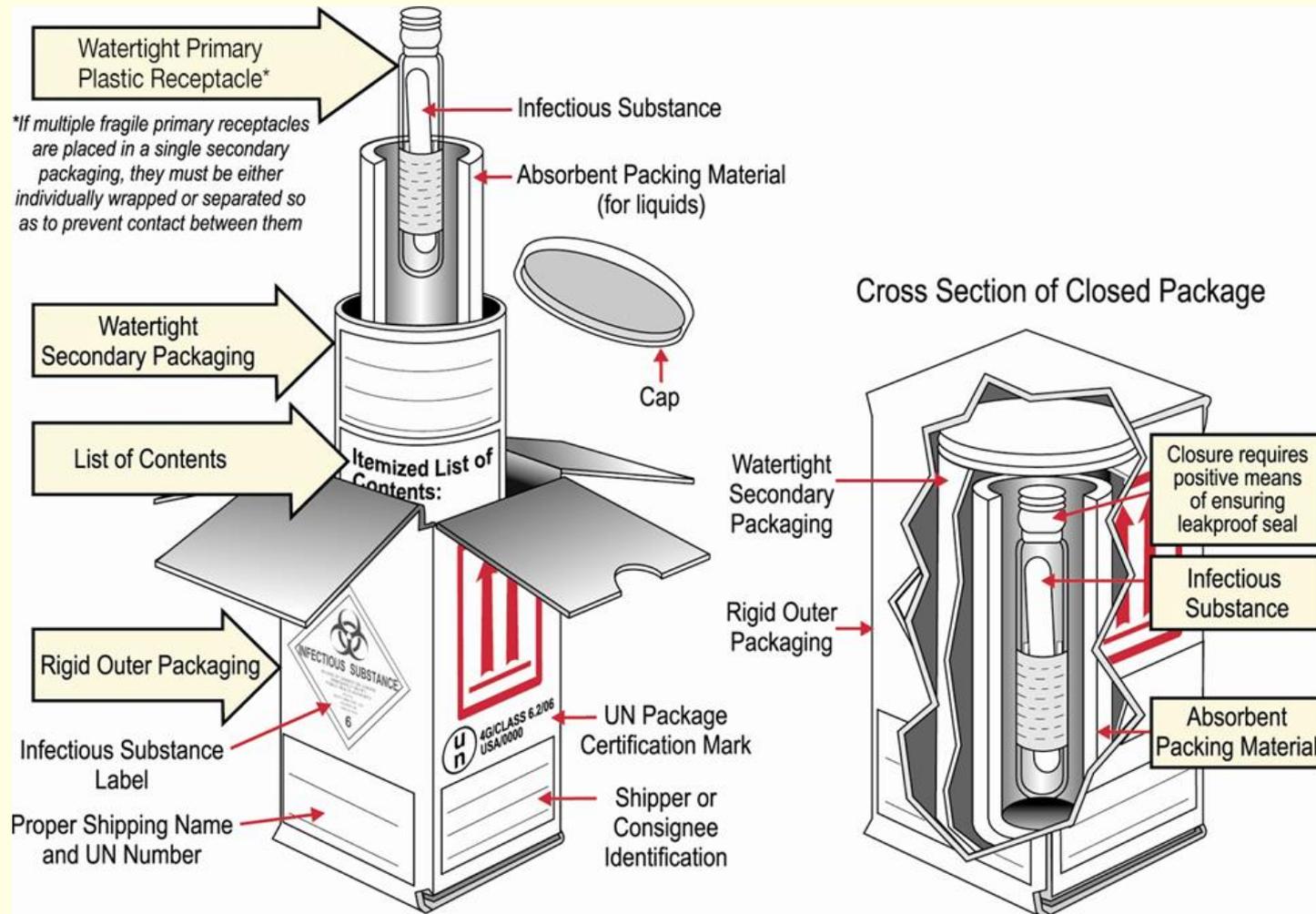


# Do's and Don'ts

- **Do not ship via UPS or USPS**
- **Do not label Package Category A suspect Ebola**
- **Do contact the state lab prior to shipping**
- **Do write ATTN: BT laboratory**
- **Do include a 24 hour emergency contact number on outside of package**



# Specimen Collection and Transport



# Clinical Specimen Submission Form



OFFICE OF LABORATORY SERVICES  
167 11<sup>th</sup> Avenue | South Charleston, WV 25303  
PH: (304) 558-3530 x2301 | FX (304) 558-0895

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## THREAT-PREPAREDNESS | BIOTERRORISM CLINICAL SPECIMEN SUBMISSION FORM

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### PATIENT INFORMATION

PATIENT ID (Chart #, etc.)		
LAST NAME	FIRST NAME	MI
DATE OF BIRTH	AGE	
COUNTY OF RESIDENCE	SEX <input type="checkbox"/> Female <input type="checkbox"/> Male	
STREET ADDRESS		
CITY	STATE	ZIP
PARENT OR GUARDIAN NAME (if applicable)		

### SUSPECTED ORGANISM(S)

--

### SPECIMEN INFORMATION

Origin: <input type="checkbox"/> Serum <input type="checkbox"/> Skin <input type="checkbox"/> Blood <input type="checkbox"/> Hair <input type="checkbox"/> Gastric <input type="checkbox"/> Stool <input type="checkbox"/> Sputum <input type="checkbox"/> Urine <input type="checkbox"/> Wound <input type="checkbox"/> Tissue <input type="checkbox"/> Exudate <input type="checkbox"/> Other	Isolation Attempted? <input type="checkbox"/> Yes # times ___ <input type="checkbox"/> No	Specimen Submitted as: <input type="checkbox"/> Original Material <input type="checkbox"/> Pure Isolate <input type="checkbox"/> Mixed Isolate  Submitted on: <input type="checkbox"/> Medium (specify) _____ <input type="checkbox"/> Other (specify) _____
DATE and TIME OF COLLECTION: (dd/mm/yyyy) <input type="checkbox"/> AM <input type="checkbox"/> PM		

### SUBMITTING PROVIDER INFORMATION

SUBMITTER AGENCY		
SUBMITTER NAME and RANK	EMPLOYMENT ID (Badge #, etc.)	
STREET ADDRESS		
CITY	STATE	ZIP
COUNTY	EMAIL	
PHONE NO.	FAX NO.	
NAME OF PERSON WHO SHOULD RECEIVE REPORT AT FACILITY		

### SENTINEL LEVEL TESTS PERFORMED AND RESULTS

--

### EPIDEMIOLOGIC INFORMATION

<input type="checkbox"/> Single Case	<input type="checkbox"/> Sporadic
<input type="checkbox"/> Epidemic	<input type="checkbox"/> Other
Date of Symptom Onset: (dd/mm/yyyy)	
Description of Clinical Symptoms	
Is patient using antibiotics?	Type of Antibiotic(s):
<input type="checkbox"/> Yes <input type="checkbox"/> No	Start Date and Duration:
Patient Employment/Trade	
Recent Travel History	Location: Date:
Any contact with ill animal or arthropod?	<input type="checkbox"/> Pigs <input type="checkbox"/> Cattle <input type="checkbox"/> Rabbits <input type="checkbox"/> Poultry <input type="checkbox"/> Tick <input type="checkbox"/> Mosquito <input type="checkbox"/> Other _____ <input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Exposure only <input type="checkbox"/> Other _____ <input type="checkbox"/> Bite
Date:	Describe Animal's Illness:
Any contact with other humans with similar symptoms?	Describe Contact's Illness:
<input type="checkbox"/> Yes <input type="checkbox"/> No	
Date:	
Other Notes	

### MANDATORY PRIOR NOTIFICATION INFORMATION

LOCAL HEALTH DEPT. (COUNTY _____)	CONTACT NAME	DATE TIME <input type="checkbox"/> AM <input type="checkbox"/> PM
DIVISION OF INFECTIOUS DISEASE EPIDEMIOLOGY (DIDE)	CONTACT NAME	DATE TIME <input type="checkbox"/> AM <input type="checkbox"/> PM
OFFICE OF LAB SERVICES (OLS) BT LAB	CONTACT NAME	DATE TIME <input type="checkbox"/> AM <input type="checkbox"/> PM
OTHER AGENCIES CONTACTED	CONTACT NAME	DATE TIME <input type="checkbox"/> AM <input type="checkbox"/> PM

### ADDITIONAL COMMENTS OR CONCERNS

--

### DELEGATION

RESULTS REPORTED TO	DATE REPORTED	TECH INITIALS
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Signature of Submitter	Date
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FAILURE TO COMPLETE THIS FORM IN ITS ENTIRETY MAY RESULT IN DELAYED TEST RESULTS

REV 06/2013

- Must be completed in its entirety
- Must be legible

# Clinical Specimen Submission Form

## PATIENT INFORMATION

PATIENT ID (Chart #, etc.)		
LAST NAME	FIRST NAME	MI
DATE OF BIRTH		AGE
COUNTY OF RESIDENCE	SEX <input type="checkbox"/> Female <input type="checkbox"/> Male	
STREET ADDRESS		
CITY	STATE	ZIP
PARENT OR GUARDIAN NAME (if applicable)		

## SUBMITTING PROVIDER INFORMATION

SUBMITTER AGENCY		
SUBMITTER NAME and RANK	EMPLOYMENT ID (Badge #, etc.)	
STREET ADDRESS		
CITY	STATE	ZIP
COUNTY	EMAIL	
PHONE NO.	FAX NO.	
NAME OF PERSON WHO SHOULD RECEIVE REPORT AT FACILITY		



OFFICE OF LABORATORY SERVICES  
157 11<sup>th</sup> Avenue | South Charleston, WV 25303  
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## THREAT-PREPAREDNESS | BIOTERRORISM CLINICAL SPECIMEN SUBMISSION FORM

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<b>PATIENT INFORMATION</b> PATIENT ID (Chart #, etc.) LAST NAME      FIRST NAME      MI DATE OF BIRTH      AGE COUNTY OF RESIDENCE      SEX <input type="checkbox"/> Female <input type="checkbox"/> Male STREET ADDRESS CITY      STATE      ZIP PARENT OR GUARDIAN NAME (if applicable)		<b>SUSPECTED ORGANISM(S)</b> _____ _____																								
<b>SUBMITTING PROVIDER INFORMATION</b> SUBMITTER AGENCY SUBMITTER NAME and RANK      EMPLOYMENT ID (Badge #, etc.) STREET ADDRESS CITY      STATE      ZIP COUNTY      EMAIL PHONE NO.      FAX NO. NAME OF PERSON WHO SHOULD RECEIVE REPORT AT FACILITY		<b>SPECIMEN INFORMATION</b> Origin: <input type="checkbox"/> Serum <input type="checkbox"/> Skin <input type="checkbox"/> Blood <input type="checkbox"/> Hair <input type="checkbox"/> Gastric <input type="checkbox"/> Stool <input type="checkbox"/> Sputum <input type="checkbox"/> Urine <input type="checkbox"/> Wound    _____ <input type="checkbox"/> Tissue    _____ <input type="checkbox"/> Exudate   _____ <input type="checkbox"/> Other      _____																								
<b>MANDATORY PRIOR NOTIFICATION INFORMATION</b> <table border="1"> <tr> <th>LOCAL HEALTH DEPT.</th> <th>CONTACT NAME</th> <th>DATE</th> </tr> <tr> <td>(COUNTY _____)</td> <td>TIME <input type="checkbox"/> AM <input type="checkbox"/> PM</td> <td></td> </tr> <tr> <th>DIVISION OF INFECTIOUS DISEASE EPIDEMIOLOGY (DIDE)</th> <th>CONTACT NAME</th> <th>DATE</th> </tr> <tr> <td></td> <td>TIME <input type="checkbox"/> AM <input type="checkbox"/> PM</td> <td></td> </tr> <tr> <th>OFFICE OF LAB SERVICES (OLS) BT LAB</th> <th>CONTACT NAME</th> <th>DATE</th> </tr> <tr> <td></td> <td>TIME <input type="checkbox"/> AM <input type="checkbox"/> PM</td> <td></td> </tr> <tr> <th>OTHER AGENCIES CONTACTED</th> <th>CONTACT NAME</th> <th>DATE</th> </tr> <tr> <td></td> <td>TIME <input type="checkbox"/> AM <input type="checkbox"/> PM</td> <td></td> </tr> </table>		LOCAL HEALTH DEPT.	CONTACT NAME	DATE	(COUNTY _____)	TIME <input type="checkbox"/> AM <input type="checkbox"/> PM		DIVISION OF INFECTIOUS DISEASE EPIDEMIOLOGY (DIDE)	CONTACT NAME	DATE		TIME <input type="checkbox"/> AM <input type="checkbox"/> PM		OFFICE OF LAB SERVICES (OLS) BT LAB	CONTACT NAME	DATE		TIME <input type="checkbox"/> AM <input type="checkbox"/> PM		OTHER AGENCIES CONTACTED	CONTACT NAME	DATE		TIME <input type="checkbox"/> AM <input type="checkbox"/> PM		Isolation Attempted? <input type="checkbox"/> Yes <input type="checkbox"/> No # times _____ # passes _____ Submitted on: <input type="checkbox"/> Original Material <input type="checkbox"/> Pure Isolate <input type="checkbox"/> Mixed Isolate <input type="checkbox"/> Medium (specify) _____ <input type="checkbox"/> Other (specify) _____
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	TIME <input type="checkbox"/> AM <input type="checkbox"/> PM																									
<b>ADDITIONAL COMMENTS OR CONCERNS</b> _____ _____		<b>DATE and TIME OF COLLECTION:</b> (dd/mm/yyyy) <input type="checkbox"/> AM <input type="checkbox"/> PM																								
<b>RESULTS ONLY</b> RESULTS REPORTED TO      DATE REPORTED      TECH INITIALS		<b>SENTINEL LEVEL TESTS PERFORMED AND RESULTS</b> _____ _____																								
<b>EPIDEMIOLOGIC INFORMATION</b> <input type="checkbox"/> Single Case <input type="checkbox"/> Sporadic <input type="checkbox"/> Epidemic <input type="checkbox"/> Other Date of Symptom Onset: (dd/mm/yyyy) Description of Clinical Symptoms _____ _____ Is patient using antibiotics? <input type="checkbox"/> Yes <input type="checkbox"/> No      Type of Antibiotic(s): _____ Patient Employment/Trade _____		Recent Travel History      Location:      Date: _____ Any contact with ill animal or arthropod? <input type="checkbox"/> Dog <input type="checkbox"/> Cat <input type="checkbox"/> Rabbit <input type="checkbox"/> Poultry <input type="checkbox"/> Tick <input type="checkbox"/> Mosquito <input type="checkbox"/> Other _____ <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Exposure only <input type="checkbox"/> Other _____ Describe Animal's Illness: _____ Describe Contact's Illness: _____ Any contact with other humans with similar symptoms? <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____ Other Notes _____																								
Signature of Submitter      Date		_____																								

FAILURE TO COMPLETE THIS FORM IN ITS ENTIRETY MAY RESULT IN DELAYED TEST RESULTS

REV 10/2013

# Clinical Specimen Submission Form



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## MANDATORY PRIOR NOTIFICATION INFORMATION

LOCAL HEALTH DEPT.  (COUNTY _____)	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM
DIVISION OF INFECTIOUS DISEASE EPIDEMIOLOGY (DIDE)	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM
OFFICE OF LAB SERVICES (OLS) BT LAB	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM
OTHER AGENCIES CONTACTED	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM

## ADDITIONAL COMMENTS OR CONCERNS

<b>OLS USE ONLY</b>		
RESULTS REPORTED TO	DATE REPORTED	TECH INITIALS

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<b>PATIENT INFORMATION</b>		<b>SUSPECTED ORGANISM(S)</b>	
PATIENT ID (Chart #, etc.)			
LAST NAME	FIRST NAME	MI	
DATE OF BIRTH	AGE	SEX	
COUNTY OF RESIDENCE		<input type="checkbox"/> Female <input type="checkbox"/> Male	
STREET ADDRESS			
CITY	STATE	ZIP	
PARENT OR GUARDIAN NAME (if applicable)			

<b>SPECIMEN INFORMATION</b>		<b>SENTINEL LEVEL TESTS PERFORMED AND RESULTS</b>	
Origin:	Isolation Attempted?	Specimen Submitted as:	
<input type="checkbox"/> Serum <input type="checkbox"/> Skin	<input type="checkbox"/> Original Material	<input type="checkbox"/> Pure Isolate	
<input type="checkbox"/> Blood <input type="checkbox"/> Hair	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Mixed Isolate	
<input type="checkbox"/> Gastric <input type="checkbox"/> Stool	# times _____	Submitted on:	
<input type="checkbox"/> Sputum <input type="checkbox"/> Urine	# passes _____	<input type="checkbox"/> Medium (specify) _____	
<input type="checkbox"/> Wound _____	<input type="checkbox"/> No	<input type="checkbox"/> Other (specify) _____	
<input type="checkbox"/> Tissue _____		DATE and TIME OF COLLECTION: (dd/mm/yyyy) <input type="checkbox"/> AM <input type="checkbox"/> PM	
<input type="checkbox"/> Exudate _____			
<input type="checkbox"/> Other _____			

<b>SUBMITTING PROVIDER INFORMATION</b>		<b>EPIDEMIOLOGIC INFORMATION</b>	
SUBMITTER AGENCY		<input type="checkbox"/> Single Case <input type="checkbox"/> Sporadic	
SUBMITTER NAME and RANK	EMPLOYMENT ID (Badge #, etc.)	<input type="checkbox"/> Epidemic <input type="checkbox"/> Other _____	
STREET ADDRESS		Date of Symptom Onset: (dd/mm/yyyy)	
CITY	STATE	ZIP	
COUNTY	EMAIL		
PHONE NO.	FAX NO.	Description of Clinical Symptoms	
NAME OF PERSON WHO SHOULD RECEIVE REPORT AT FACILITY			

<b>MANDATORY PRIOR NOTIFICATION INFORMATION</b>		
LOCAL HEALTH DEPT.  (COUNTY _____)	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM
DIVISION OF INFECTIOUS DISEASE EPIDEMIOLOGY (DIDE)	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM
OFFICE OF LAB SERVICES (OLS) BT LAB	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM
OTHER AGENCIES CONTACTED	CONTACT NAME	DATE  <input type="checkbox"/> AM <input type="checkbox"/> PM
ADDITIONAL COMMENTS OR CONCERNS		
<div style="border: 1px solid black; height: 40px;"></div>		
<b>OLS USE ONLY</b>		
RESULTS REPORTED TO	DATE REPORTED	TECH INITIALS

FAILURE TO COMPLETE THIS FORM IN ITS ENTIRETY MAY RESULT IN DELAYED TEST RESULTS



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### PATIENT INFORMATION

PATIENT ID (Check #, etc.) \_\_\_\_\_

LAST NAME FIRST NAME MI

DATE OF BIRTH AGE

COUNTY OF RESIDENCE SEX  
 Female  Male

STREET ADDRESS

CITY STATE ZIP

PARENT OR GUARDIAN NAME (if applicable) \_\_\_\_\_

### SUSPECTED ORGANISM(S)

SPECIMEN INFORMATION

Origin:  
 Serum  Skin  
 Blood  Hair  
 Gastric  Stool  
 Sputum  Urine  
 Wound \_\_\_\_\_  
 Tissue \_\_\_\_\_  
 Exudate \_\_\_\_\_  
 Other \_\_\_\_\_

Isolation Attempted?  
 Yes # times \_\_\_\_  
 No # passes \_\_\_\_

Specimen Submitted as:  
 Original Material  
 Pure Isolate  
 Mixed Isolate

Submitted on:  
 Medium (specify) \_\_\_\_\_  
 Other (specify) \_\_\_\_\_

DATE and TIME OF COLLECTION: (dd/mm/yyyy)  
 AM  PM

### SENTINEL LEVEL TESTS PERFORMED AND RESULTS

\_\_\_\_\_

### SUBMITTING PROVIDER INFORMATION

SUBMITTER AGENCY

SUBMITTER NAME and RANK EMPLOYMENT ID (Badge #, etc.) \_\_\_\_\_

STREET ADDRESS

CITY STATE ZIP

COUNTY EMAIL

PHONE NO. FAX NO.

NAME OF PERSON WHO SHOULD RECEIVE REPORT AT FACILITY \_\_\_\_\_

### EPIDEMIOLOGIC INFORMATION

Single Case  Sporadic  
 Endemic  Other

Date of Symptom Onset: (dd/mm/yyyy)

Description of Clinical Symptoms \_\_\_\_\_

Is patient using antibiotics?  Yes  No Type of Antibiotic(s): \_\_\_\_\_  
Start Date and Duration: \_\_\_\_\_

Patient Employment/Trade \_\_\_\_\_

Recent Travel History Location: \_\_\_\_\_ Date: \_\_\_\_\_

Any contact with animal or anthropod?  
 Pigs  Cattle  Rabbits  Poultry  
 Yes  No  Ticks  Mosquito  Other \_\_\_\_\_

Exposure only  Other \_\_\_\_\_  
Bite \_\_\_\_\_

Date: \_\_\_\_\_ Describe Animal's Illness: \_\_\_\_\_

Any contact with other humans with similar symptoms?  
 Yes  No

Date: \_\_\_\_\_ Describe Contact's Illness: \_\_\_\_\_

Other Notes \_\_\_\_\_

### MANDATORY PRIOR NOTIFICATION INFORMATION

LOCAL HEALTH DEPT.	CONTACT NAME	DATE
(COUNTY _____)	_____	TIME <input type="checkbox"/> AM <input type="checkbox"/> PM
DIVISION OF INFECTIOUS DISEASE EPIDEMIOLOGY (DIDE)	CONTACT NAME	DATE
_____	_____	TIME <input type="checkbox"/> AM <input type="checkbox"/> PM
OFFICE OF LAB SERVICES (OLS) BT LAB	CONTACT NAME	DATE
_____	_____	TIME <input type="checkbox"/> AM <input type="checkbox"/> PM
OTHER AGENCIES CONTACTED	CONTACT NAME	DATE
_____	_____	TIME <input type="checkbox"/> AM <input type="checkbox"/> PM

### ADDITIONAL COMMENTS OR CONCERNS

\_\_\_\_\_

**LAB USE ONLY**

RESULTS REPORTED TO	DATE REPORTED	TECH INITIALS
_____	_____	_____

FAILURE TO COMPLETE THIS FORM IN ITS ENTIRETY MAY RESULT IN DELAYED TEST RESULTS

REV 06/2013

## SUSPECTED ORGANISM(S)

\_\_\_\_\_

## SPECIMEN INFORMATION

Origin: <input type="checkbox"/> Serum <input type="checkbox"/> Skin <input type="checkbox"/> Blood <input type="checkbox"/> Hair <input type="checkbox"/> Gastric <input type="checkbox"/> Stool <input type="checkbox"/> Sputum <input type="checkbox"/> Urine <input type="checkbox"/> Wound _____ <input type="checkbox"/> Tissue _____ <input type="checkbox"/> Exudate _____ <input type="checkbox"/> Other _____	Isolation Attempted? <input type="checkbox"/> Yes # times ____ <input type="checkbox"/> No # passes ____	Specimen Submitted as: <input type="checkbox"/> Original Material <input type="checkbox"/> Pure Isolate <input type="checkbox"/> Mixed Isolate
DATE and TIME OF COLLECTION: _____		Submitted on: <input type="checkbox"/> Medium (specify) _____ <input type="checkbox"/> Other (specify) _____
		(dd/mm/yyyy) <input type="checkbox"/> AM <input type="checkbox"/> PM

## SENTINEL LEVEL TESTS PERFORMED AND RESULTS

\_\_\_\_\_

# Clinical Specimen Submission Form



OFFICE OF LABORATORY SERVICES  
167 11<sup>th</sup> Avenue | South Charleston, WV 25303  
PH: (304) 558-3530 x2301 | FX: (304) 558-0895

PLACE BARCODE HERE  
OLS USE ONLY

## THREAT-PREPAREDNESS | BIOTERRORISM CLINICAL SPECIMEN SUBMISSION FORM

**INSTRUCTIONS:** Specimens submitted for testing **MUST** include this fully completed submission form. Use one form per source. Use this form **ONLY** for samples submitted to the Threat-Preparedness & Bioterrorism Response Section (BT Lab) for identifying potential Bioterrorism Agents. You **MUST** receive verbal authorization from the BT Lab prior to sending any specimens. Notify your local health department and submit a written report per their instructions. Please print or type answers.

### PATIENT INFORMATION

PATIENT ID (Check #, etc.)

LAST NAME	FIRST NAME	MI
DATE OF BIRTH	AGE	
COUNTY OF RESIDENCE	SEX <input type="checkbox"/> Female <input type="checkbox"/> Male	
STREET ADDRESS		
CITY	STATE	ZIP
PARENT OR GUARDIAN NAME (if applicable)		

### SUSPECTED ORGANISM(S)

SPECIMEN INFORMATION

Origin: <input type="checkbox"/> Serum <input type="checkbox"/> Skin <input type="checkbox"/> Blood <input type="checkbox"/> Hair <input type="checkbox"/> Gastric <input type="checkbox"/> Stool <input type="checkbox"/> Sputum <input type="checkbox"/> Urine <input type="checkbox"/> Wound <input type="checkbox"/> Tissue <input type="checkbox"/> Exudate <input type="checkbox"/> Other _____	Isolation Attempted? <input type="checkbox"/> Yes # times ____ <input type="checkbox"/> No	Specimen Submitted as: <input type="checkbox"/> Original Material <input type="checkbox"/> Pure Isolate <input type="checkbox"/> Mixed Isolate  Submitted on: <input type="checkbox"/> Medium (specify) _____ <input type="checkbox"/> Other (specify) _____
DATE and TIME OF COLLECTION: (dd/mm/yyyy) <input type="checkbox"/> AM <input type="checkbox"/> PM		

### SUBMITTING PROVIDER INFORMATION

SUBMITTER AGENCY

SUBMITTER NAME and RANK	EMPLOYMENT ID (Badge #, etc.)
STREET ADDRESS	
CITY	STATE ZIP
COUNTY	EMAIL
PHONE NO.	FAX NO.
NAME OF PERSON WHO SHOULD RECEIVE REPORT AT FACILITY	

### SENTINEL LEVEL TESTS PERFORMED AND RESULTS

\_\_\_\_\_

### EPIDEMIOLOGIC INFORMATION

<input type="checkbox"/> Single Case	<input type="checkbox"/> Sporadic
<input type="checkbox"/> Epidemic	<input type="checkbox"/> Other _____
Date of Symptom Onset: (dd/mm/yyyy)	
Description of Clinical Symptoms	
Is patient using antibiotics? <input type="checkbox"/> Yes <input type="checkbox"/> No	Type of Antibiotic(s): Start Date and Duration: _____
Patient Employment/Trade	
Recent Travel History	Location: _____ Date: _____
Any contact with ill animal or arthropod? <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Pigs <input type="checkbox"/> Cattle <input type="checkbox"/> Rabbits <input type="checkbox"/> Poultry <input type="checkbox"/> Tick <input type="checkbox"/> Mosquito <input type="checkbox"/> Other _____ <input type="checkbox"/> Exposure only <input type="checkbox"/> Other _____ <input type="checkbox"/> Bite _____
Date: _____	Describe Animal's Illness: _____
Any contact with other humans with similar symptoms? <input type="checkbox"/> Yes <input type="checkbox"/> No	Describe Contact's Illness: _____
Date: _____	
Other Notes	
Signature of Submitter	Date

### MANDATORY PRIOR NOTIFICATION INFORMATION

LOCAL HEALTH DEPT. (COUNTY _____)	CONTACT NAME	DATE	<input type="checkbox"/> AM <input type="checkbox"/> PM
DIVISION OF INFECTIOUS DISEASE EPIDEMIOLOGY (DIDE)	CONTACT NAME	DATE	<input type="checkbox"/> AM <input type="checkbox"/> PM
OFFICE OF LAB SERVICES (OLS) BT LAB	CONTACT NAME	DATE	<input type="checkbox"/> AM <input type="checkbox"/> PM
OTHER AGENCIES CONTACTED	CONTACT NAME	DATE	<input type="checkbox"/> AM <input type="checkbox"/> PM

### ADDITIONAL COMMENTS OR CONCERNS

\_\_\_\_\_

RESULTS REPORTED TO	DATE REPORTED	TECH INITIALS
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FAILURE TO COMPLETE THIS FORM IN ITS ENTIRETY MAY RESULT IN DELAYED TEST RESULTS

REV 06/13

## EPIDEMIOLOGIC INFORMATION

<input type="checkbox"/> Single Case	<input type="checkbox"/> Sporadic
<input type="checkbox"/> Epidemic	<input type="checkbox"/> Other _____
Date of Symptom Onset: (dd/mm/yyyy)	
Description of Clinical Symptoms	
Is patient using antibiotics? <input type="checkbox"/> Yes <input type="checkbox"/> No	Type of Antibiotic(s): Start Date and Duration: _____
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Date: _____	Describe Animal's Illness: _____
Any contact with other humans with similar symptoms? <input type="checkbox"/> Yes <input type="checkbox"/> No	Describe Contact's Illness: _____
Date: _____	
Other Notes	
Signature of Submitter	
Date	

# Test Method

## Real-Time RT-PCR assay (4-6 hours for result)



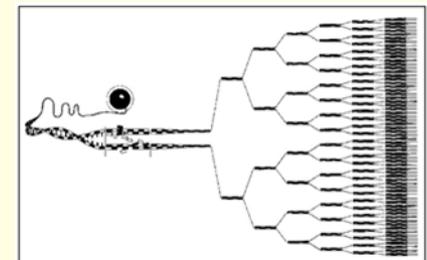
Whole blood



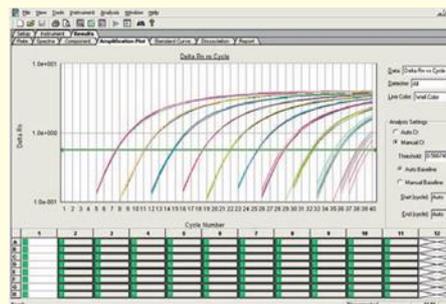
Extraction of RNA



ABI 7500 Fast Dx



Amplification



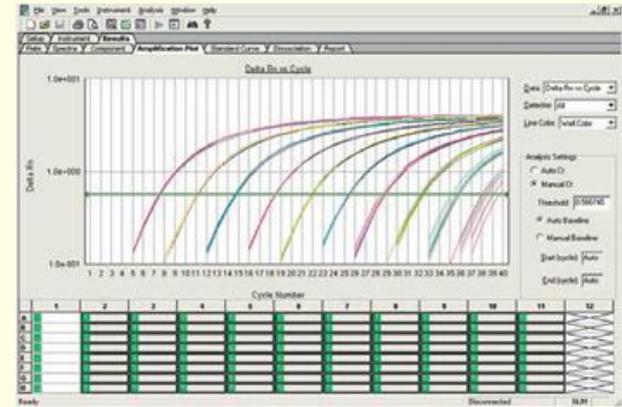
Ct values



Positive or Negative?

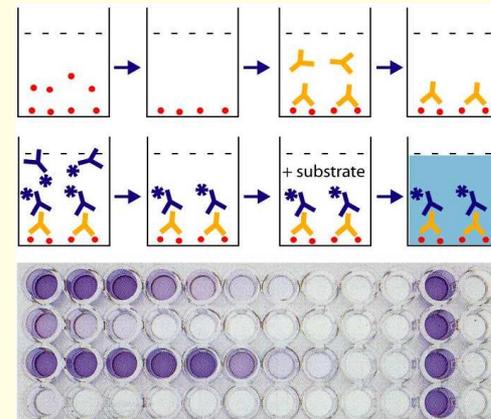
## What does it mean if sample is presumptive positive?

- Specimen is positive for all markers  
Further testing needed to confirm
- PCR is not the “gold standard”  
For Ebola confirmatory testing



## CDC sample request for confirmatory testing by antigen-capture enzyme-linked immunosorbent assay (ELISA) testing

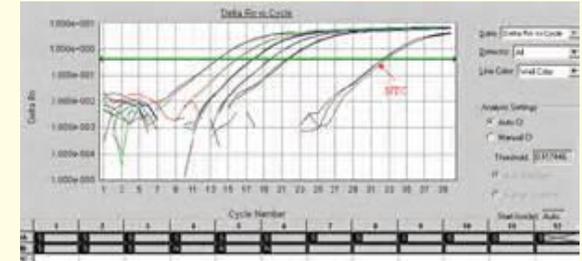
- IgM and IgG
- Can take 24- 48 hours



# Interpretation of Results

- **OLS can issue final report if Negative by PCR**

- What does this mean?



- **CDC issues report in combination with results obtained from OLS**

- OLS presumptive positive by PCR
- CDC confirms sample using more extensive test methods

- **Results are in!**

- Patient is Confirmed positive for Ebola virus

- **CDC contacts OLS with results**

- Report issued to submitter, DIDE, and local health department



# Helpful Links

- **West Virginia Ebola Information Resource Center**

<http://www.dhhr.wv.gov/bph/Pages/Ebola.aspx>

- **CDC – Ebola Virus Disease (EVD)**

<http://www.cdc.gov/vhf/ebola/>

- **CDC – PPE Guidance**

<http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html>

- **CDC – Infection Control for PUI**

<http://www.cdc.gov/vhf/ebola/healthcare-us/hospitals/infection-control.html>

- **WHO – Blood Collection Guide**

<http://www.who.int/csr/resources/publications/ebola/blood-collect-en.pdf>

**PLEASE FILL OUT THE  
“LABORATORY TESTING” PRESENTATION  
EVALUATION.**

**THANK YOU!**

# Questions



# Contact

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Sentinel Laboratory Liaison

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South Charleston, WV 25303

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WEB: <http://www.wvdhhr.org/labservices/>