

Dallas County Public Health Lab

First Case of Ebola in the U.S.

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Dallas County Health Department
May 18, 2015**



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Objectives

- Time Line and Overview of the Dallas County Public Health Response to the 2014 Ebola Outbreak
- Lessons Learned from the 2014 Ebola Outbreak
- Best Practices and Tools to enhance Preparedness Response Planning.

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- Time Line

- Sunday September 28, 2014
 - Index patient admitted to isolation at Presbyterian Hospital
- Sunday September 28, 2014
 - Chief Epidemiologist called about shipping sample
- Monday September 29, 2014
 - Presbyterian used Jaguar Couriers to transport samples
- Monday September 29, 2014
 - Samples arrived at DCHHS

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- Time Line (cont)
 - Monday September 29, 2014
 - Samples were shipped to DSHS State Lab and CDC
 - Tuesday September 30, 2014
 - Samples at DSHS State Lab arrived at 9:17 AM
 - Samples at CDC arrived at 9:51 AM
 - Tuesday September 30, 2014
 - Preliminary and confirmatory results were done
 - **CONFIRMED EBOLA INFECTION**
 - DCHHS sent out Health Advisory (#4)

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DALLAS COUNTY HEALTH AND HUMAN SERVICES EPIDEMIOLOGY

Zachary Thompson
Director

Dr. Christopher Perkins
Health Authority/ Medical Director

From: Jessica Smith, MPH, Epidemiologist
Wendy Chung, MD, Chief Epidemiologist

To: Dallas County Medical Providers and Laboratory Staff

Date: September 30, 2014

HEALTH ADVISORY (#4): Ebola Virus Disease

A patient hospitalized in Dallas County was confirmed to have Ebola infection this afternoon, through testing performed at the CDC and state laboratories¹. This is the first imported case of Ebola to have been diagnosed in the United States. The person had arrived in Dallas from Liberia on 9/20/14 to visit family and began developing illness symptoms on 9/24/14. The individual sought medical care at Texas Presbyterian Hospital of Dallas on 9/26/14. After developing symptoms consistent with Ebola, the patient was admitted into isolation on 9/28/14 and testing for Ebola was recommended in consultation that day with Dallas County Health and Human Services (DCHHS) and CDC, based on travel history and symptoms. Meticulous infection control measures are in place for the patient, to ensure the safety of patients and staff.

DCHHS is working with the CDC and state health department to identify all persons who have had close personal contact with the case and to provide close monitoring of contacts for symptoms. These efforts will also be further supported by the arrival of a CDC team tomorrow. CDC does not recommend that persons on the same commercial airline flights as the case undergo any monitoring, since this case was not symptomatic and therefore not contagious during the flights. Anyone concerned about possible exposure can call CDC-Info at 800-CDC-INFO for more information.

As the largest Ebola epidemic in history will likely continue for months in West Africa, **all clinicians should be prepared to evaluate a febrile traveler from affected countries**. DCHHS requests that all healthcare providers in Dallas County hospital and acute care settings:

- (1) Review with staff the respective CDC preparedness checklists for: [Healthcare providers](#)², [Healthcare facilities](#)³ and [Emergency Medical Services](#)⁴, in preparation for encountering possible EVD cases.
- (2) **Collect a travel history in all patients presenting with fever.** Travel history is also essential to recognition of patients with other imported diseases, including Middle East Respiratory Syndrome coronavirus (MERS-CoV). Healthcare facilities should adopt the following practices:
 - At entrance to all acute care areas, including triage areas, place posters that ask patients to immediately inform staff if they are ill and recently traveled internationally.
 - Establish **routine** processes to **immediately** ask any patient presenting with fever about travel.
 - Place a surgical mask on anyone who reports travel to a country affected by the EVD outbreak, and immediately escort the patient to a private room for medical evaluation.
- (3) **Promptly isolate in a single patient room and use standard, contact and droplet precautions for a patient that meets the following criteria:**
 - Travel within 21 days before illness onset to an EVD outbreak affected area (i.e., Guinea, Liberia, Sierra Leone, Nigeria), **AND**
 - Fever (>38.5°C or 101.5°F) **and** any compatible symptoms (e.g., severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or hemorrhage)

Immediately report any patient who meets the criteria above (in #3) to DCHHS by phone at 214-819-2004 or after-hours at 877-605-2660. Please be prepared to discuss clinical information, travel history, and risk exposure history. (See attached [DCHHS screening questions and algorithm](#)⁵.) Additional updates and advisories will be communicated to the medical community as investigations evolve.

1. CDC Press Release Sept 30, 2014. www.cdc.gov/media/releases/2014/s930-ebola-confirmed-case.html
2. CDC. Health Care Facility Preparedness EVD Checklist. www.cdc.gov/vhf/ebola/pdf/healthcare-facility-checklist-for-ebola.pdf
3. CDC. Health Care Provider Preparedness EVD Checklist. www.cdc.gov/vhf/ebola/pdf/healthcare-provider-checklist-for-ebola.pdf
4. CDC Detailed EMS Checklist for EVD. www.cdc.gov/vhf/ebola/pdf/emsc-checklist-ebola-preparedness.pdf
5. DCHHS. www.dallascounty.org/department/hhs/documents/DCHHSAlgorithmforTestingoSuspectedEVD_20140827final.pdf

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- Time Line (cont)
 - Wednesday October 1, 2014
 - Presbyterian Hospital requested our (LRN) help for shipping/Materials and overall guidance
 - Thursday October 2, 2014
 - DCHHS requested the Ebola Kit **
 - Thursday October 9 - 17, 2014
 - Daniel Serinaldi and DSHS Epi Team drove specimens to Austin, TX
 - Saturday October 11, 2014
 - Nurse #1 confirmed positive
 - Sunday October 12, 2014
 - DCHHS Director sent email requesting Kit

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- Time Line (cont)

- Wednesday October 15, 2014
 - Nurse #2 confirmed positive
- Thursday October 16, 2014
 - DCHHS submitted APHL Risk Assessment
- Friday October 17, 2014
 - DCHHS was approved for Testing
 - Luis Lowe and Rahsaan Drumgoole arrive at DCHHS
 - Received and performed validation panel
 - Passed
- Sunday October 19, 2014
 - DCHHS began testing Ebola samples

Austin Tested: 16

DCHHS To Date: 11

Total: 27 samples

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- Lessons Learned
 - Let the State Health Department do what they do...
 - Support local HD with testing until you (DCHHS) is able
 - Now DCHHS can focus on:
 - Provide service to the community
 - Support and consult with sentinel labs
 - We spent time at Presbyterian lab
 - Consulted with Children's and Baylor Hospital
 - Develop training manuals for:
 - How to Transport Ebola Samples
 - How to don/doff...

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Laboratory Guidance (BT Coordinator Daniel Serinaldi)

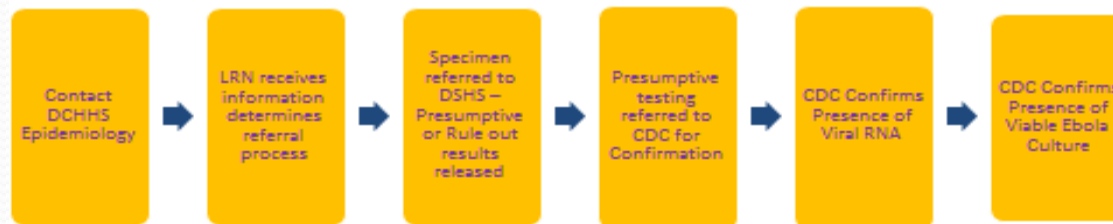
Laboratory Guidance for EVD
Dallas County 2014



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Laboratory Guidance (BT Coordinator Daniel Serinaldi)

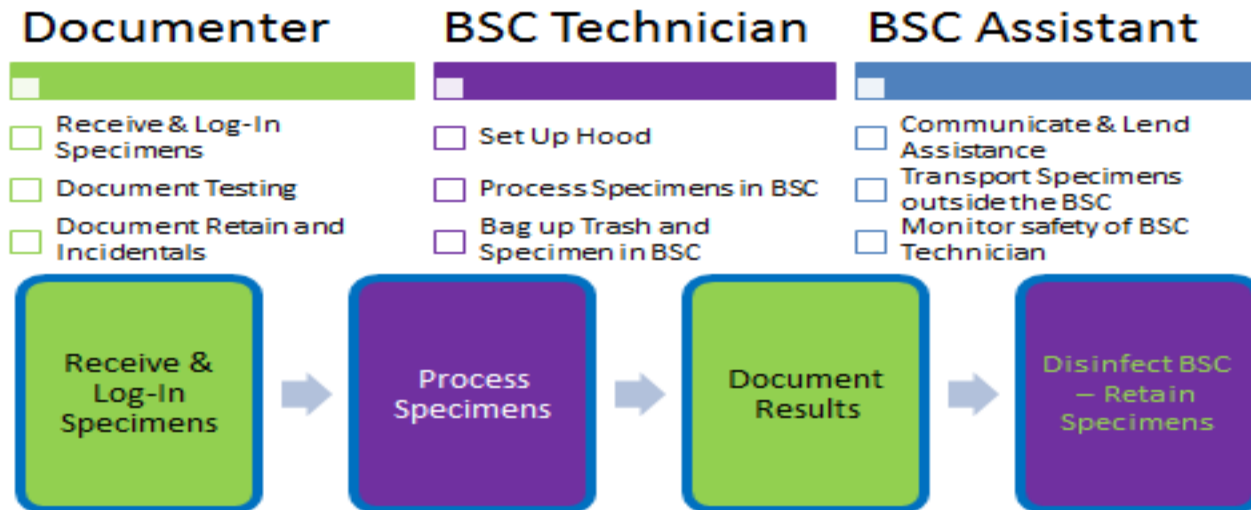
Sample Submission



- CDC recommends the use of local Epidemiology Branches and LRN laboratories to facilitate the referral and testing of specimens as to not overwhelm their central capabilities
- High Risk exposures may be referred directly to CDC if requested by CDC and determined necessary by Epidemiology / LRN.
- Two Specimens may need to be tested to Rule Out Ebola as Viral titers may be undetectable in early onset stages

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Laboratory Guidance



In Forming a Technical Task Force:

- Willingness
- Background
- Experience – Hematology, Microbiology, Generalist...

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Laboratory Guidance

Documenter	BSC Technician	BSC Assistant
<input type="checkbox"/> Disposable Scrubs	<input type="checkbox"/> Disposable Scrubs	<input type="checkbox"/> Disposable Scrubs
<input type="checkbox"/> Impermeable Wrap Around Gown	<input type="checkbox"/> Laboratory Shoes	<input type="checkbox"/> Impermeable Wrap Around Gown
<input type="checkbox"/> 12" Taped and Double Gloved	<input type="checkbox"/> Tyvek Suit	<input type="checkbox"/> 12" Taped and Double Gloved
<input type="checkbox"/> Fit Tested and Approved N-95 Mask	<input type="checkbox"/> 12" Taped and Double Gloved	<input type="checkbox"/> Fit Tested and Approved N-95 Mask
<input type="checkbox"/> Goggles	<input type="checkbox"/> PAPR, Hood, and Belted Charged Battery Pack	<input type="checkbox"/> Face Shield
<input type="checkbox"/> Booties / Leggings	<input type="checkbox"/> Booties	<input type="checkbox"/> Booties / Leggings

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Laboratory Guidance

Laboratory Donning W/O Tyvek

- Donning
 - Check Gauges & Sign In
 - Enter Locker Room
 - Stow all personals
 - Get undressed
 - Don Disposable Scrubs
 - Enter Ante-Room
 - Don Wrap Around Gown
 - Don first pair of Gloves inside out and over cuff of Gown
 - Tape Gloves to Gown
 - Don second Pair of gloves
 - Don N-95 Mask
 - Don goggles or face shield
 - Don booties or leggings
 - Check Gauges
 - Enter Laboratory

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Laboratory Guidance

Laboratory Donning with Tyvek & PAPR

- Donning
 - Check Gauges Sign In
 - Enter Locker Room
 - Stow all personals
 - Get undressed
 - Don Disposable Scrubs
 - Don laboratory socks & shoes
 - Tape socks to scrubs
 - Enter Ante-Room
 - Plug battery in to assure charge
 - Don belt and battery
 - Assemble PAPR and hood
 - Inspect Tyvek for tears
 - Don 1st pair of gloves
 - Don Tyvek
 - Don 2nd pair of Gloves inside out and over cuff of Gown
 - Tape Gloves to Tyvek
 - Don Apron
 - Don 3rd Pair of gloves
 - Plug PAPR into battery
 - Don PAPR
 - Zip up Tyvek and tape zipper
 - Tie PAPR under neck
 - Don booties
 - Check Gauges
 - Enter BSL-3 Laboratory

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Laboratory Guidance

Pre-Analytical Procedures

- Specimens must be transported in a leak-proof secondary container
- Identification may be placed on the container and must be on the outside
- The specimen should be received by a trained Documenter
- The specimen shall be placed in the primary container and the secondary container filled when work begins

Analytical Procedures

- Do not work under the BSC without external assistance
- Do not work with multiple technicians in the BSC
- Do not bring materials into the BSC which create clutter. An assisting technician can acquire materials when necessary
- Do disinfect the BSC before and after every use and provide a bucket of 50% bleach for a spill
- Do document all tests, results and necessary information in real time

Post Analytical Procedures

- Do hard cap and seal (parafilm) all specimens needing to be Ruled Out.
- Do retain specimens upright with absorbent material, triple bagged, disinfected and possibly in a hard Category A packaging container ready for shipment
- Determine an effective process for documenting, securing and monitoring retain at cold temperatures
- Do be prepared to work and communicate with outside agencies

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- Lessons Learned (cont)
 - Stabilize the community/Sentinel labs then move into testing **
 - Staff focuses on what is at hand and let everything else in the periphery fall away.

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- Best Practices and Tools
 - Can be summed up:
 - Working on the fly and Team work
 - Being able to set up testing quickly
 - Great relationship with your sentinel lab(s)
 - Presbyterian called us to assist in packing/shipping
 - DCHHS arrived at Presbyterian Wednesday (day after)
 - Assisted with packing/shipping
 - DCHHS drove specimens from Hospital to lab
 - Addressed other concerns...sample transport/don/doff

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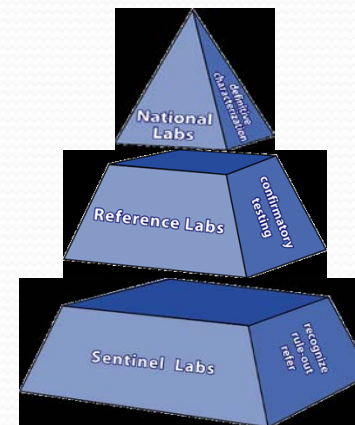
- Best Practices and Tools
 - Team work
 - Communication...
 - Great relationship with your own epidemiology team
 - DCHHS epidemiology staff were filling out the PUI and paper work then faxing to our lab

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LRN Mission

The LRN and its partners will develop, maintain and strengthen an integrated national and international network of laboratories that can respond quickly to needs for rapid testing, timely notification and secure reporting of results associated with acts of biological or chemical terrorism and other high priority public health emergencies (October 2005).

Courtesy CDC



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Give Thanks:

Dallas LRN Team:

- Daniel Serinaldi (BT Coordinator)
- Sami Peyrovi (BT Microbiologist)

➤ **Dallas Epidemiology Team**

Special Thanks:

- Luis Lowe (CDC)



QUESTIONS