Pediatric Considerations for Ebola Virus Disease (EVD) Preparedness and Response

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Ebola Virus

- Prototype Viral Hemorrhagic Fever Pathogen
  - Filovirus: enveloped, non-segmented, negative-stranded RNA virus
  - Severe disease with high case fatality
  - Absence of specific treatment or vaccine

- >20 previous Ebola virus outbreaks since 1976
- 2014 West Africa Ebola outbreak caused by *Zaire Ebola virus* species (five known Ebola virus species)
Ebola Virus

• Zoonotic virus – bats the most likely reservoir, although species unknown
• Spillover event from infected wild animals (e.g., fruit bats, monkey, duiker) to humans, followed by human-human transmission
Current Ebola Situation

Total Cases per CDC, West Africa
(Updated December 15, 2014)
Updated Case Counts available at

Countries with Outbreaks
Totals for Guinea, Liberia & Sierra Leone
Total Case Count: 18464
Total Deaths: 6841
Laboratory Confirmed Cases: 11699

Case incidence is declining

Source: http://www.gowestafrica.org/explore/
Current Ebola Situation

Total Cases per CDC

(Updated December 15, 2014) Updated Case Counts available at

Previously Affected Countries

**Senegal:**
Total Case Count: 1
Total Case Deaths: 0

**Spain:**
Total Case Count: 1
Total Case Deaths: 0

**Nigeria:**
Total Case Count: 20
Total Case Deaths: 8

Countries with Limited Transmission

**United States**
Total Case Count: 4
Total Case Deaths: 1

**Mali**
Total Case Count: 8
Total Case Deaths: 6
EVD Cases (United States)

- EVD has been diagnosed in the United States in four people, one (the index patient) who traveled to Dallas, Texas from Liberia, two healthcare workers who cared for the index patient, and one medical aid worker who traveled to New York City from Guinea

  - **Index patient** – Symptoms developed on September 24, 2014 approximately four days after arrival, sought medical care at Texas Health Presbyterian Hospital of Dallas on September 26, was admitted to hospital on September 28, testing confirmed EVD on September 30, patient died October 8.

  - **TX Healthcare Worker, Case 2** – Cared for index patient, was self-monitoring and presented to hospital reporting low-grade fever, diagnosed with EVD on October 10, recovered and released from NIH Clinical Center October 24.

  - **TX Healthcare Worker, Case 3** – Cared for index patient, was self-monitoring and reported low-grade fever, diagnosed with EVD on October 15, recovered and released from Emory University Hospital in Atlanta October 28.

  - **NY Medical Aid Worker, Case 4** – Worked with Ebola patients in Guinea, was self-monitoring and reported fever, diagnosed with EVD on October 24, recovered and released from Bellevue Hospital in New York City November 11.

As of December 15, 2014, five U.S. health workers and one journalist who were infected with Ebola virus in West Africa were transported to hospitals in the United States for care

- One patient expired

- All others have recovered and have been released from the hospital after laboratory testing confirmed that they no longer have Ebola virus in their blood
Ebola Virus Transmission

• Virus present in high quantity in blood, body fluids, and excreta of *symptomatic* EVD-infected patients

• Opportunities for human-to-human transmission
  – Direct contact (through broken skin or unprotected mucous membranes) with an EVD-infected patient’s blood or body fluids
  – Sharps injury (with EVD-contaminated needle or other sharp)
  – Direct contact with the corpse of a person who died of EVD
  – Indirect contact with an EVD-infected patient’s blood or body fluids via a contaminated object (soiled linens or used utensils)

• Ebola can also be transmitted via contact with blood, fluids, or meat of an infected animal
  – Limited evidence that dogs become infected with Ebola virus
  – No reports of dogs or cats becoming sick with or transmitting Ebola
Detection of Ebola Virus in Different Human Body Fluids over Time
Human-to-Human Transmission

• Infected persons are not contagious until onset of symptoms

• Infectiousness of body fluids (e.g., viral load) increases as patient becomes more ill
  – Remains from deceased infected persons are highly infectious

• Human-to-human transmission of Ebola virus via inhalation (aerosols) has not been demonstrated
### EVD Risk Assessment

#### HIGH-RISK EXPOSURE
- Percutaneous (e.g., needle stick) or mucous membrane contact with blood or body fluids from an Ebola patient
- Direct skin contact with, or exposure to blood or body fluids of, an Ebola patient
- Processing blood or body fluids from an Ebola patient without appropriate personal protective equipment (PPE) or biosafety precautions
- Direct contact with a dead body (including during funeral rites) in a country with wide-spread Ebola transmission** without appropriate PPE

#### LOW-RISK EXPOSURE
- Household members of an Ebola patient and others who had brief direct contact (e.g., shaking hands) with an Ebola patient without appropriate PPE
- Healthcare personnel in facilities with confirmed or probable Ebola patients who have been in the care area for a prolonged period of time while not wearing recommended PPE

#### NO KNOWN EXPOSURE
- Residence in or travel to a country with wide-spread Ebola transmission** without HIGH- or LOW-risk exposure
Transmission of EVD to Children

• Based on available data, children and adolescents often comprise a small percentage of EVD cases
  – 1995 Zaire: 9% of 315 EVD cases in those <18yo
  – 2014 Guinea: 18% of current EVD cases in those <18yo

• Investigators suggest that the low number of pediatric cases are due to cultural practices of keeping children away from sick family members = reduced EVD transmission
Ebola Virus Pathogenesis

- Direct infection of tissues
- Immune dysregulation
- Hypovolemia and vascular collapse
  - Electrolyte abnormalities
  - Multi-organ failure, septic shock
- Disseminated intravascular coagulation (DIC) and coagulopathy

Lancet. Mar 5, 2011; 377(9768): 849–862
Early Clinical Presentation

- Acute onset; typically 8–10 days after exposure (range 2–21 days)
- Signs and symptoms
  - Initial: Fever, chills, myalgias, malaise, anorexia
  - After 5 days: GI symptoms, such as nausea, vomiting, watery diarrhea, abdominal pain
  - Other: Headache, conjunctivitis, hiccups, rash, chest pain, shortness of breath, confusion, seizures
  - Hemorrhagic symptoms in 18% of cases
- Other possible infectious causes of symptoms
  - Malaria, typhoid fever, meningococcemia, Lassa fever and other bacterial infections (e.g., pneumonia) – all very common in Africa
Clinical Features

• Nonspecific early symptoms progress to:
  – Hypovolemic shock and multi-organ failure
  – Hemorrhagic disease
  – Death

• Non-fatal cases typically improve 6–11 days after symptoms onset

• Fatal disease associated with more severe early symptoms
  – Fatality rates of 70% have been reported in rural Africa
  – Intensive care, especially early intravenous and electrolyte management, may increase the survival rate
Clinical Manifestations by Organ System in West African Ebola Outbreak

<table>
<thead>
<tr>
<th>Organ System</th>
<th>Clinical Manifestation</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Fever (87%), fatigue (76%), arthralgia (39%), myalgia (39%)</td>
</tr>
<tr>
<td>Neurological</td>
<td>Headache (53%), confusion (13%), eye pain (8%), coma (6%)</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>Chest pain (37%),</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>Cough (30%), dyspnea (23%), sore throat (22%), hiccups (11%)</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>Vomiting (68%), diarrhea (66%), anorexia (65%), abdominal pain (44%), dysphagia (33%), jaundice (10%)</td>
</tr>
<tr>
<td>Hematological</td>
<td>Any unexplained bleeding (18%), melena/hematochezia (6%), hematemesis (4%), vaginal bleeding (3%), gingival bleeding (2%), hemoptysis (2%), epistaxis (2%), bleeding at injection site (2%), hematuria (1%), petechiae/ecchymoses (1%)</td>
</tr>
<tr>
<td>Integumentary</td>
<td>Conjunctivitis (21%), rash (6%)</td>
</tr>
</tbody>
</table>

Examples of Hemorrhagic Signs

Hematemesis

Gingival bleeding

Bleeding at IV Site
Ebola Symptoms Timeline

**Ebola virus’ typical path through a human being**

**First symptoms**
- Day 7-9: Headache, fatigue, fever, muscle soreness
- Day 10: Sudden high fever, vomiting, blood, passive behavior
- Day 11: Bruising, brain damage, bleeding from nose, mouth, eyes, anus
- Day 12: Loss of consciousness, seizures, massive internal bleeding, death

© 2014 MCT
Source: U.S. Centers for Disease and Control, BBC
Graphic: Melina Yingling
Laboratory Findings

- Thrombocytopenia (50,000–100,000/µL range)
- Leukopenia followed by neutrophilia
- Transaminase elevation: elevation serum aspartate amino-transferase (AST) > alanine transferase (ALT)
- Electrolyte abnormalities from fluid shifts
- Coagulation: PT and PTT prolonged
- Renal: proteinuria, increased creatinine
Manifestations of EVD in Children

• Typically present with non-specific signs and symptoms like adults
• Unexplained bleeding and bruising less common but data is limited
  – 2000 Sudan:
    • 100% children with lab-confirmed EVD were febrile
    • 16% children with lab-confirmed EVD had hemorrhage
    • Respirator and GI symptoms were common among children
    • CNS symptoms were rare among children
Case Definition

Person Under Investigation (PUI)
1) Clinical criteria, which includes fever and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage;

2) AND Epidemiologic risk factors within the incubation period
   - contact with blood or other body fluids or human remains of a patient known to have or suspected to have EVD;
   - residence or travel in an area where EVD transmission is active
   - direct handling of bats, rodents, or primates from disease - endemic areas.
Notification

• The Louisiana Office of Public Health has a 24-hour hotline accessible by EMS, Healthcare Providers, Fire, & Law Enforcement responders:
  – To discuss a possible Ebola exposure or to report a suspected case, contact the Louisiana Office of Public Health immediately at 504-568-8313 or after 4:30 p.m. weekdays and weekends 800-256-2748.
Interim Guidance for Hospital Preparedness for Evaluation, Testing, and Management of Patients with Possible or Confirmed Ebola Virus Disease (EVD)

Persons under active monitoring who develop signs or symptoms compatible with Ebola Virus Disease

Contact relevant state or local public health authority

Refer for evaluation and possible testing (based on the state’s plan) to an Ebola Assessment Hospital or Ebola Treatment Center

Ebola Treatment Centers

Ebola Assessment Hospitals

Frontline Healthcare Facilities

Capabilities

• Care for and manage patient throughout disease process
• Evaluate and care for patient for up to 96 hours or until discharged or transferred
• Initiate Ebola testing and transport patient to Ebola treatment Center if lab-confirmed EVD
• Staff trained and proficient in donning/doffing, proper waste management, infection control practices and specimen transport
• Identify patients with relevant exposure history and Ebola-compatible symptoms
• Isolate patients
• Inform health department
• Initiate testing if low risk; high risk should be transferred for evaluation and testing
• Staff trained on specimen transport, waste management, Standard Precautions; proficient in donning/doffing

PPE Needs

• Maintain Ebola PPE sufficient for at least 7 days of patient care
• The use of PPE should be based on the patient’s clinical status
• Maintain Ebola PPE sufficient for 4-5 days of patient care
• The use of PPE should be based on the patient’s clinical status
• PPE for clinically stable patients should be sufficient for most patients
• Maintain access to Ebola PPE sufficient for 12-24 hours of patient care, to be used if needed
Laboratories

- CDC has developed interim guidance for U.S. laboratory workers and other healthcare personnel who collect or handle specimens.
- This guidance includes information about the appropriate steps for collecting, transporting, and testing specimens from patients who are suspected to be infected with Ebola.
- Specimens should NOT be shipped to CDC without consultation with state health department.

Packaging & Shipping Clinical Specimens to CDC for Ebola Testing

http://www.cdc.gov/vhf/ebola/hcp/packaging-diagram.html
Ebola Virus Diagnosis

- **Real Time PCR (RT-PCR)**
  - Used to diagnose acute infection
  - More sensitive than antigen detection ELISA
  - Identification of specific viral genetic fragments
  - Performed in select CLIA-certified laboratories *(LA OPH Lab is one of the approved labs)*

- **RT-PCR sample collection**
  - Volume: minimum volume of 4mL whole blood
  - Plastic collection tubes (not glass or heparinized tubes)
  - Whole blood preserved with EDTA is preferred
    - Whole blood preserved with sodium polyanethol sulfonate (SPS), citrate, or with clot activator is acceptable
Other Ebola Virus Diagnostics

• Virus isolation
  – Requires Biosafety Level 4 laboratory;
  – Can take several days

• Immunohistochemical staining and histopathology
  – On collected tissue or dead wild animals; localizes viral antigen

• Serologic testing for IgM and IgG antibodies (ELISA)
  – Detection of viral antibodies in specimens, such as blood, serum, or tissue suspensions
  – Monitor the immune response in confirmed EVD patients
EVD: Expected diagnostic test results over time

Critical information: Date of onset of fever/symptoms

- **viremia**
- **IgM**
- **IgG**

**Fever**

**RT-PCR**

**ELISA IgM**: up to 3 – 6 months

**ELISA IgG**: 3 – 5 years or more (life-long persistence?)
Interpreting Negative Ebola RT-PCR Result

• If symptoms started ≥3 days before the negative result
  – EVD is unlikely → consider other diagnoses
  – Infection control precautions for EVD can be discontinued unless clinical suspicion for EVD persists

• If symptoms started <3 days before the negative RT-PCR result
  – Interpret result with caution
  – Repeat the test at ≥72 hours after onset of symptoms
  – Keep in isolation as a suspected case until a repeat RT-PCR ≥72 hours after onset of symptoms is negative
Pediatric Facility Considerations

- Where will you isolate a PUI in your facility for a minimum of 72 hours?
- Have you identified healthcare personnel to care for a PUI or EVD patient? Have they met all training requirements?
- Do you have the proper PPE for your personnel for a minimum of 72 hours?
- Will you do POC lab testing?
- Do you have a plan to limit contact with non-essential personnel?
PPE Selection and Guidance

- Prior to working with EVD Patients, all healthcare workers involved must have received repeated training and have demonstrated competency in performing all Ebola-infection control practices, specifically donning and doffing proper PPE.
- While working in PPE, healthcare workers caring for EVD patients should have no skin exposed.
- PPE donning and doffing must be supervised by a trained observer.
- There should be designed areas for donning and doffing PPE.
PPE Selection and Guidance

Standard, Contact, Droplet Precaution PPE at a minimum

- PAPR with full face shield, helmet, or headpiece or
- N95 Respirator with single-use surgical hood
- Single-Use Double Gloves with extended cuffs (Nitrile)
- Single-Use Gown (fluid resistant or impermeable)
- Single-Use Bot Covers (fluid resistant or impermeable)
- Single –Use Apron if copious fluids (fluid resistant or impermeable)
Clinical Management of EVD: Supportive, but Aggressive

• Hypovolemia and sepsis physiology
  – Aggressive intravenous fluid resuscitation
  – Hemodynamic support and critical care management if necessary

• Electrolyte and acid-base abnormalities
  – Aggressive electrolyte repletion
  – Correction of acid-base derangements

• Symptomatic management of fever and gastrointestinal symptoms
  – Avoid NSAIDS

• Multisystem organ failure can develop and may require
  – Oxygenation and mechanical ventilation
  – Correction of severe coagulopathy
  – Renal replacement therapy

Investigational Therapies for EVD Patients

- No approved Ebola-specific prophylaxis or treatment
  - Ribavirin has no in-vitro or in-vivo effect on Ebola virus
  - Therapeutics in development with limited human clinical trial data
    - Convalescent serum
    - Therapeutic medications
      - Zmapp – chimeric human-mouse monoclonal antibodies
      - Tekmira – lipid nanoparticle small interfering RNA
      - Brincidofovir – oral nucleotide analogue with antiviral activity
    - Vaccines – in clinical trials
      - Chimpanzee-derived adenovirus with an Ebola virus gene inserted
      - Attenuated vesicular stomatitis virus with an Ebola virus gene inserted
Patient Recovery

- Case-fatality rate 71% in the 2014 Ebola outbreak
  - 73.4% in children younger than 15yo
  - Case-fatality rate is likely much lower with access to intensive care
- Patients who survive often have signs of clinical improvement by the second week of illness
  - Associated with the development of virus-specific antibodies
  - Antibody with neutralizing activity against Ebola persists greater than 12 years after infection
- Prolonged convalescence
  - Includes arthralgia, myalgia, abdominal pain, extreme fatigue, and anorexia; many symptoms resolve by 21 months
  - Significant arthralgia and myalgia may persist for >21 months
  - Skin sloughing and hair loss has also been reported
Consequence Management
Today

As of December 16, 2014

0 Cases in Louisiana
How are other State Agencies Notified of a suspected or confirmed case?

Planning Assumptions:
- Lab-confirmation can take up to 48 hours.
- A probable case with a high-index of suspicion will be treated as a confirmed case and steps for activation would be followed.
- In short, ID Epi is the trigger mechanism

ESF 5- Command/SA: activation of parish/ state conference calls
ESF 5- Coordination Function: activation of critical ESFs

ESF13 - Potential need for Enforcement element for House-hold Operation
ESF 10 - Hazmat Remediation element for House-Hold Operation

ESF5 - Command/SA: to facilitate coordination and communications with OHSEPs and critical partners

Parish OHSEP - Command/SA/Coordination: to facilitate awareness among response agencies (ie. 911, Fire, EMS, etc) in parish to ensure readiness for community questions

LSP Hazmat Hotline - Regional OPH MD/ Epi notifies Hazmat Hotline for technicians/vendors to conduct remediation for House-Hold Operation.
LSP Hazmat Hotline - 1-877-925-6595 or 225-925-6595

If needed, can provide assets for alternate-housing locations; to provide case workers if needed to interface with HOUSE-HOLD for gaps (ie. food, wrap-around) during the 21-day quarantine
Operation: House-Hold Decontamination

ESF10 – Hazmat

Protocol:
1. ID Epi conducts epidemiological investigation with the House-Hold.
2. After completion of Epidemiological investigation, OPH MD and/or ID Epi contacts LSP Hazmat Hotline to activate technical team (vendor) to conduct remediation. 1-877-925-6595 or 225-925-6595.
3. LSP Hazmat lead interfaces with ID Epi regarding guidance on the House-Hold contaminated items.
4. LSP Hazmat lead provides overall scene safety and will be the entity that provides direct guidance to the contracted vendor for performance completion of remediation work.
5. GOHSEP is the Contracting Official (COTR) for the list of Vendors.

Note: ESF10 to determine if local ESF10 footprint will provide asset or if State ESF10 footprint (above) will be tasked.

Potential Vendors to be identified here:
- There were approximately 12 vendors canvased by LSP that were credentialed to do remediation work (and were willing to do remediation work for Ebola cases). GOHSEP is working with DHH and DOA to develop specs and RFP.

Reimbursement: absorbed/floated by ESF10; file reimbursement costs to DOA
# Concept of Operations for House-Hold Contacts

## House-Hold Contact(s)

- Voluntary quarantine/confinement with possible enforcement (ESF 13)
- Wrap-around provisions for up to 21 days:

## Table: Concept of Operations for House-Hold Contacts

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>House-Hold</strong></td>
<td><strong>Local Solutions</strong></td>
<td><strong>Hazardous Material Cleanup</strong></td>
<td><strong>State</strong></td>
</tr>
<tr>
<td>Food and water</td>
<td>address gaps that cannot be provided by house-hold / family</td>
<td>Organize crew with appropriate PPE.</td>
<td>Daily monitoring by ESF8 (IDEpi) to determine whether house-hold contacts are sick.</td>
</tr>
<tr>
<td>Laundry</td>
<td>Behavioral Health consultation via Locally Governed Entities (LGE)</td>
<td>Scope: Pick up contaminated items and provide disposal</td>
<td>Intermittent monitoring by ESF6 to determine mass care gaps and local resource solutions.</td>
</tr>
<tr>
<td>Medicines/Pharmacy</td>
<td>Faith based support</td>
<td>ESF10 – deploy team or vendor for House-Hold remediation</td>
<td></td>
</tr>
<tr>
<td>Family care items - Diapers, etc</td>
<td>American Red Cross – for convenience kits; behavioral health support</td>
<td>Coordination between IDEpi and ESF10 asset regarding contaminated items</td>
<td></td>
</tr>
<tr>
<td>Family to work with ID Epi on how to protect themselves from contaminated items.</td>
<td>VOAD for organizing fixture items for the House-Hold – ie. beds, fridge, pantry items.</td>
<td></td>
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</tr>
</tbody>
</table>
Who shows up at the House-Hold?

Enabling Elements:

<table>
<thead>
<tr>
<th>ESF 8</th>
<th>ID Epi</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>OPH Medical Director</td>
</tr>
</tbody>
</table>

**Role/Objective**
- to talk to house-hold members and conduct epidemiology investigation
- to identify contaminated items so as to communicate this with ESF10 asset

<table>
<thead>
<tr>
<th>ESF 13</th>
<th>Local and/or State</th>
</tr>
</thead>
</table>

- to potentially enforce 21 day containment
- to provide scene security as media and others will likely show up to the site

<table>
<thead>
<tr>
<th>ESF 10</th>
<th>Local and/or state asset</th>
</tr>
</thead>
</table>

- to conduct remediation and decontamination of site
- interface with ESF8 regarding contaminated items

Any other critical ESFs **at the scene**?

Potential: PIO

OFF-SITE: Incident Command Footprint and ESF6 – for case managers, alternate housing
The state of Louisiana requires the following:

- Reporting of such travel (Ebola impacted countries) to the Department of Health and Hospitals, Infectious Disease Epidemiology section (EPI)
LA EXECUTIVE ORDER NO. BJ 2014 – 13
(continued)

– Restrictions or advisories regarding use of commercial transportation (including airplane, ship, bus, train, taxi, or other public conveyance) for twenty-one (21) days after departing an impacted area.

– Restrictions or advisories regarding going to places where the public congregates, including but not limited to, restaurants, grocery stores, gymnasiums, theaters, etc. for twenty-one (21) days after departing an impacted area.

– Procedures for daily communication and monitoring, if determined necessary, by public health officials for twenty-one (21) days after departing an impacted area.
EVD Algorithm for Evaluation of the Returned Traveler

**FEVER** (subjective or $\geq 100.4^\circ F$ or $38.0^\circ C$) or compatible Ebola symptoms* in a patient who has resided in or traveled to a country with wide-spread Ebola transmission** in the 21 days before illness onset

* headache, weakness, muscle pain, vomiting, diarrhea, abdominal pain, or hemorrhage

**Report** asymptomatic patients with high- or low-risk exposures (see below) in the past 21 days to the health department

**YES**

1. Isolate patient in single room with a private bathroom and with the door to hallway closed
2. Implement standard, contact, and droplet precautions (gown, facemask, eye protection, and gloves)
3. Notify the hospital Infection Control Program and other appropriate staff
4. Evaluate for any risk exposures for Ebola
5. IMMEDIATELY report to the health department

**CDC Website to check current affected areas:** [www.cdc.gov/vhf/ebola](http://www.cdc.gov/vhf/ebola)


Interim Guidance for Monitoring and Movement of Persons with EVD Exposure

• CDC has created guidance for monitoring people exposed to Ebola virus but without symptoms

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<tr>
<th>RISK LEVEL</th>
<th>PUBLIC HEALTH ACTION</th>
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<tbody>
<tr>
<td></td>
<td>Monitoring</td>
</tr>
<tr>
<td>HIGH risk</td>
<td>Direct Active Monitoring</td>
</tr>
<tr>
<td>SOME risk</td>
<td>Direct Active Monitoring</td>
</tr>
<tr>
<td>LOW risk</td>
<td>Active Monitoring for some; Direct Active Monitoring for others</td>
</tr>
<tr>
<td>NO risk</td>
<td>No</td>
</tr>
</tbody>
</table>

EVD Summary

• The 2014 Ebola outbreak in West Africa is the largest in history and has affected multiple countries

• Think Ebola: U.S. healthcare providers should be aware of clinical presentation and risk factors for EVD

• Human-to-human transmission by direct contact
  – No human-to-human transmission via inhalation (aerosols)
  – No transmission before symptom onset

• Early case identification, isolation, treatment and effective infection control are essential to prevent Ebola transmission
Notification

Contact the Louisiana Office of Public Health immediately to discuss a possible exposure, request laboratory testing, or report a suspected case

504-568-8313 (Monday – Friday 8am-4:30pm) or 800-256-2748 (weekdays after 4:30pm and weekends)
Ebola Q &A Hotline

Call 1-855-LAEBOLA
8:00 a.m. – 5:00 p.m. 7 days a week
Keeping Up With EVD

CDC
http://www.cdc.gov/vhf/ebola/index.html

DHH
http://www.dhh.state.la.us/index.cfm/page/1974