MLS Laboratory Update: MDH Preparedness for Ebola Virus Disease Due to *Sudan ebolavirus* in Uganda

OCTOBER 19, 2022

Purpose of this Message:

To provide awareness to MLS laboratories regarding MDH preparedness for Ebola virus disease (EVD) due to *Sudan ebolavirus* in Uganda, travel related disease and reporting of travel associated illness to MDH, and updates to the MDH-PHL testing catalog for EVD. This information is also being shared with clinicians via the MDH Health Alert Network MDH Health Alert Network (https://www.health.state.mn.us/han).

Action Item:

Please forward this information to appropriate staff at your facility.

Background:

Situation Update

On September 20, 2022, the Ministry of Health of Uganda officially declared an outbreak of Ebola virus disease (EVD) due to the *Sudan ebolavirus*. As of October 12, 2022, there have been 74 cases and 39 deaths. No suspected, probable, or confirmed EVD cases have been reported to date outside of Uganda and the risk of importation into the U.S. is currently assessed as low. As a precaution, CDC is routing all travelers from Uganda to the U.S. through 5 airports (JFK – New York, Newark – New Jersey, Dulles – Virginia, Atlanta– GA, - and O'Hare – Chicago) for screening purposes. Travelers without high-risk exposure who are asymptomatic do not need to be quarantined and may travel onward. For travelers whose final destination is Minnesota, MDH has implemented traveler monitoring in conjunction with the CDC quarantine station at MSP Airport and will be contacting travelers for an initial risk assessment and post-arrival symptom monitoring for 21 days from their Uganda departure date.

Testing Updates at MDH-PHL

Effective immediately, MDH-PHL will begin using the BioFire FilmArray NGDS Warrior Panel for specimens submitted for Ebola virus detection.

- Prior consultation with MDH, followed by CDC approval, is required before submitting any specimens for Ebola virus testing.
    - If a diagnosis of EVD is considered, clinicians should notify MDH immediately at 651-201-5414 or 877-676-5414.
- After consultation and MDH approval: submit two (2) 5mL Vacutainer (or equivalent) whole blood EDTA tubes ("purple top tubes").

  - Do not submit specimens in glass containers or in heparinized tubes.

- Store refrigerated (2-8°C) and package with cold packs for transport.
- Specimens must be packaged and transported in accordance with IATA regulations
  - Online Saf-T-Pak Category A shipping training is available through an APHL grant; please see the MLS Laboratory Update: September 16, 2022, for details on training availability and schedules MLS Laboratory Updates (https://www.health.state.mn.us/diseases/idlab/mls/alerts.html).
- **MDH will assist in arranging transport of specimens to MDH PHL.**
  - Please contact the MDH PHL Logistics team at health.idlablogistics@state.mn.us for assistance during regular business hours.
  - For afterhours assistance, please call the MDH-PHL After Hours Phone (651-282-3723).
- Specimens will be tested for all known human pathogenic Ebola virus and Marburg virus species, as well as *Bacillus anthracis*.
- A negative RT-PCR test result from a blood specimen collected from a symptomatic patient less than 72 hours after onset of symptoms does not rule out EVD; a negative result greater than 72 hours after symptom onset does rule out EVD. See Considerations for Discharging People Under Investigation (PUIs) for Ebola Virus Disease (EVD) (https://www.cdc.gov/viral-hemorrhagic-fevers/hcp/diagnosis-testing/discharging-people-under-evaluation.html).
- Positive results for either Ebola virus or Marburg virus are treated as presumptive positives and are sent by MDH-PHL to CDC for confirmation, using an alternative method.
- Positive results for *Bacillus anthracis* are treated as presumptive positive and will be confirmed by MDH-PHL.
- **Result reports will include three panel targets: Ebola virus, Marburg virus, and *B. anthracis*. Each panel target will be reported individually under the Order Choice "BioFire NGDS Warrior Panel – Blood (EDTA)".**
  - **Ebola, Marburg, and *B. anthracis* are currently the only targets from the BioFire FilmArray NGDS Warrior Panel that MDH-PHL will be reporting out.**

Table 1: Results report options from the BioFire FilmArray NGDS Warrior Panel

	Negative	Positive (See NOTE)	Equivocal	Invalid
Ebola virus	Negative	POSITIVE for Ebola virus	N/A	Invalid
Marburg virus	Negative	POSITIVE for Marburg virus	N/A	Invalid
Bacillus anthracis	Negative	POSITIVE for *Bacillus anthracis*	Equivocal	Invalid

NOTE: All positive results from the BioFire FilmArray NGDS Warrior Panel are considered presumptive; additional testing will be performed.

Ebola Virus Disease

- The incubation period for EVD can range from 2-21 days following exposure (typically 8-12 days). A person with EVD is not contagious until symptoms develop. Presenting signs and

symptoms are non-specific and may include fever, headache, muscle and joint pain, fatigue, nausea, vomiting, diarrhea, abdominal pain, and unexplained bleeding. See Ebola Virus Disease (EVD) Information for Clinicians in U.S. Healthcare Settings (https://www.cdc.gov/ebola/hcp/clinical-guidance/).

- During the early phase of illness, it is not possible to distinguish clinically between EVD, other viral hemorrhagic fevers such as Marburg virus, or other febrile illnesses such as malaria or influenza. Ebola virus is spread through direct contact with broken skin or mucous membranes with the body fluids (blood, urine, vomit, feces, saliva, tears, or other secretions) of someone who is sick or who has died from EVD. EVD may also be spread via contaminated objects such as needles or clothing. EVD is not spread through airborne transmission.

- There is currently no FDA-licensed vaccine to protect against *Sudan ebolavirus* infection and there are no FDA-approved specific treatments for *Sudan ebolavirus*. EVD has a high mortality rate in the absence of early diagnosis and appropriate care but with intensive fluid replacement and supportive care mortality rates may be lowered.

- MDH is in communication with both Minnesota Ebola and Special Pathogen Treatment Centers (MHealth University of Minnesota West Bank-Minneapolis and Mayo Clinic-St Mary's, Rochester) who are ready to assess and admit patients if needed.

Infection Prevention

Healthcare personnel can be exposed to Ebola virus by touching a patient's body fluids, contaminated medical supplies and equipment, or contaminated environmental surfaces. Splashes to unprotected mucous membranes such as eyes, nose, or mouth are particularly hazardous. Procedures that can increase environmental contamination with infectious material or create aerosols should be minimized. CDC recommends a combination of measures to prevent transmission of EVD in hospitals, including PPE, which can be found at Infection Prevention and Control Recommendations for Hospitalized Patients Under Investigation (PUIs) for Ebola Virus Disease (EVD) in U.S. Hospitals (https://www.cdc.gov/viral-hemorrhagic-fevers/hcp/infection-control/). CDC PPE recommendations are based on evaluation of the patient's clinical status and the medical interventions being performed.

- Guidance on Personal Protective Equipment (PPE) | Personal Protective Equipment (PPE) | Public Health Planners | Ebola (Ebola Virus Disease) | CDC (https://www.cdc.gov/viral-hemorrhagic-fevers/hcp/guidance/ppe-clinically-unstable.html)
- Guidance for Clinically Stable PUIs | Personal Protective Equipment (PPE) | Public Health Planners | Ebola (Ebola Virus Disease) | CDC (https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html)
- Ebola PPE Frequently Asked Questions | Personal Protective Equipment (PPE) | Public Health Planners | Ebola (Ebola Virus Disease) | CDC (https://www.cdc.gov/viral-hemorrhagic-fevers/hcp/guidance/ppe-faqs.html)

Training materials on PPE including donning and doffing can be found in the MDH High Consequence Infectious Diseases toolkit: MDH High Consequence Infectious Diseases Toolkit (https://www.health.state.mn.us/diseases/hcid/index.html).

Recommendations for Clinicians

Clinicians should be aware of the possibility of EVD in a person recently returned for Uganda. A travel history should be obtained from any ill patient presenting with a clinical picture suggestive of an infectious etiology, such as fever. Clinicians should consider EVD in the differential diagnosis from ill travelers who have returned from Uganda and patients should be placed in a private room for clinical evaluation. **If a diagnosis of EVD is considered, clinicians should notify MDH immediately at 651-201-5414 or 877-676-5414.** However, given the low likelihood of importation of EVD cases into the US, evaluation for diseases in returning travelers which may present similarly to EVD should be considered. **Malaria is more likely than EVD and testing for malaria should not be delayed while consulting with MDH and CDC about EVD.**

Finally, frontline clinicians should be aware of the MDH Traveler Monitoring Program for travelers recently returned from Uganda, as these patients will be monitored for symptoms and MDH may recommend further medical assessment in a healthcare facility if needed. In the 2014-2016 West Africa Ebola Outbreak, 43 of 783 travelers (5%) enrolled in MDH travel monitoring reported signs or symptoms of an illness and 2 were tested for EVD. Symptoms related to chronic health conditions were the most commonly reported concern. Upper respiratory infections, malaria, and gastrointestinal infections were the most common infectious causes detected (see *Development and Implementation of the Ebola Traveler Monitoring Program and Clinical Outcomes of Monitored Travelers during October – May 2015, Minnesota*, PLOS ONE, (https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0166797)).

Additional Information:

- CDC Health Alert: Outbreak of Ebola virus disease (Sudan ebolavirus) in Central Uganda. October 6, 2022 (https://emergency.cdc.gov/han/2022/han00477.asp)
- CDC Clinician Outreach and Communication Activity (COCA) Call: Update on 2022 Ebola Outbreak in Uganda (https://emergency.cdc.gov/coca/calls/2022/callinfo_101222.asp)
- CDC: Ebola Outbreak September 2022 Uganda, Mubende District (https://www.cdc.gov/media/releases/2022/s1018-ebola-outbreaks-uganda.html)
- MDH: High Consequence Infectious Disease (HCID) Toolbox for Frontline Health Care Facilities (https://www.health.state.mn.us/diseases/hcid/index.html)
- A copy of this MLS will be available on the MLS Alerts website (https://www.health.state.mn.us/diseases/idlab/mls/alerts.html)

The content of this message is intended for public health and health care personnel and response partners who have a need to know the information to perform their duties.

Questions: Please contact: Emergency Preparedness and Response Unit Supervisor Aaron Barnes, MD, PhD at aaron.m.t.barnes@state.mn.us or Infectious Disease Laboratory Manager Anna Strain, PhD at anna.strain@state.mn.us.

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PLEASE FORWARD THIS TO ALL APPROPRIATE PERSONNEL WITHIN YOUR INSTITUTION AND HEALTH SYSTEM

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www.health.state.mn.us/diseases/idlab/mls/index.html

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To obtain this information in a different format, call: 651-201-5200.