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Health Alert:
Outbreak of Ebola Virus Disease Due to Sudan Virus in Central Uganda
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Summary

- On September 20, 2022, Uganda declared an outbreak of Ebola virus disease (EVD) caused by Sudan virus (species *Sudan ebolavirus*). No suspected, probable, or confirmed cases have been reported in the United States.
- Clinicians should suspect EVD in a patient who has signs and symptoms consistent with Ebola virus infection (fever, severe headache, muscle pain, weakness, fatigue, vomiting, diarrhea, stomach pain, and unexplained bleeding) and an epidemiological risk factor (e.g., travel to affected areas in Uganda) within 21 days before the onset of symptoms.
- Healthcare providers should routinely ask patients with signs or symptoms of infectious illness about recent international travel. If there is suspicion for EVD, healthcare providers should immediately take EVD specific infection control precautions and notify the local health department (LHD).
- The U.S. Centers for Disease Control and Prevention (CDC) plans to initiate returning traveler monitoring at select U.S. airports on October 10, 2022; none are in California. However, any California resident identified as having traveled to a high-risk area will be referred to the California Department of Public Health (CDPH) for follow up; CDPH will work with LHDs to identify these travelers.
- Returning travelers from areas with an active Ebola outbreak should contact their LHD and seek medical care immediately if they develop symptoms of EVD. Before going to the doctor's office, emergency room, or other clinical setting, they should contact the doctor or other healthcare provider and inform them about the recent travel and symptoms.

Background

The California Department of Public Health (CDPH), in collaboration with the U.S. Centers for Disease Control and Prevention (CDC), has been closely monitoring an outbreak of Ebola virus disease (EVD) due to Sudan virus (species *Sudan ebolavirus*) in Central Uganda. On September 20, 2022, Uganda health authorities declared an outbreak of EVD following laboratory confirmation of a patient from Mubende district in Central Uganda. As of October 6, 2022, a total of 44 confirmed cases and 30 deaths (10 confirmed and 20 probable) have been identified in Uganda. The CDC, World Health



organization (WHO), and other partners are working closely with Uganda Ministry of Health (MOH) to respond to this outbreak.

As of October 6, no suspected, probable, or confirmed cases of EVD have been detected in the United States. The outbreak is currently limited to five districts in Central Uganda and there have been no cases in Uganda's capital city Kampala or the travel hub of Entebbe. However, spread of the outbreak within the region is possible due to several factors including the likelihood that EVD was spreading several weeks before identification of the index case; not all early transmission chains were able to be traced; patients initially presented to healthcare facilities with suboptimal infection, prevention and control (IPC) practices; individuals who died were traditionally buried with large ceremonies; and the location of the origin of the outbreak was in a mining region along a main highway two hours away from Uganda's capital city of Kampala and leading to the Democratic Republic of Congo.

While there are no direct flights from Uganda to California or elsewhere in the United States, travelers from or passing through affected areas in Uganda can enter the United States on flights connecting from other countries. **CDPH continues to remind healthcare providers in hospitals, emergency departments, and clinics to routinely ask patients with signs or symptoms of acute and infectious illness about recent international travel.**

Ebola Virus Disease

Four species of the genus *Ebolavirus* cause disease in humans:

- Ebola virus (species *Zaire ebolavirus*)
- Sudan virus (species *Sudan ebolavirus*)
- Taï Forest virus (species *Taï Forest ebolavirus*, formerly *Côte d'Ivoire ebolavirus*)
- Bundibugyo virus (species *Bundibugyo ebolavirus*)

The *Zaire ebolavirus* was associated with several large outbreaks in Central Africa and Western Africa, including the 2014–2016 West African EVD epidemic during which there were more than 28,000 cases and 11,000 deaths. Eleven people were treated for Ebola in the United States during the 2014-2016 epidemic, the majority of whom were medical workers who had traveled to West Africa, but also including two healthcare workers who acquired EVD in the US while caring for a patient and subsequently recovered. Sudan virus (species *Sudan ebolavirus*) has caused seven previous outbreaks in Sudan and Uganda. The most recent Ebola outbreak due to Sudan virus occurred in Uganda in 2012. Previous outbreaks of Sudan virus have had a mortality rate of approximately 50%.

Person-to-person transmission of Ebola, including Sudan virus, occurs through direct contact with blood and other body fluids (e.g., urine, feces, saliva, vomit, sweat, semen,

droplets, and other secretions) of a person who is sick with or died from Ebola. Ebola can also spread through direct contact with contaminated objects (like needles or syringes) or semen from a man who recently recovered from Ebola. Ebola is **not** spread through airborne transmission. [Signs and symptoms](#) of EVD include fever, severe headache, muscle pain, weakness, fatigue, vomiting, diarrhea, stomach pain, and unexplained bleeding. A person can only spread Ebola to other people after developing signs and symptoms of Ebola. Risk factors for EVD include traveling to an EVD-affected area and having an exposure which may include taking care of an ill patient or a sick loved one, attending a funeral, or having unprotected sex (oral, vaginal, anal) with a man who has recently recovered from EVD. The incubation period for EVD is up to 21 days. EVD is a disease with a high mortality rate, however early supportive care increases the chances of recovery.

Recommendations for Returned Travelers from Areas with Active EVD Transmission

- Self-monitor for fever and other symptoms of EVD, which include fever, severe headache, muscle pain, weakness, fatigue, vomiting, diarrhea, stomach pain, and unexplained bleeding during the 21 days after leaving an area experiencing an active EVD outbreak.
- Seek medical care immediately if you develop symptoms of EVD. Before going to the doctor's office, emergency room, or other clinical setting, contact the doctor or other healthcare provider and inform them about the recent travel and symptoms. This will help healthcare providers prepare their facility and protect other people.
- If you have questions about EVD symptoms or self-monitoring, contact your LHD.

Recommendations for Local Health Departments

- Beginning the week of October 10, 2022, the CDC and Department of Homeland Security will implement funneling of air passengers traveling to the U.S. who had been to Uganda. These passengers will fly into Atlanta (ATL), Chicago (ORD), Newark (EWR), New York (JFK) and Washington DC (IAD). Any California resident identified as having traveled to a high-risk area will be referred to CDPH for follow up. CDPH will work with LHDs to identify these travelers, conduct risk assessments, and provide guidance on monitoring and followup.
- LHDs can use the "Ebola Contact Tracking" condition in CalREDIE for monitoring of individuals who have returned from affected areas in Uganda. This condition includes three User Defined Forms: 1) Contact Summary, 2) Travel History, and 3) Symptom Diary that can be used for 21-day monitoring. The "Ebola Virus Disease" condition in CalREDIE can be used for individuals with suspected EVD.

Recommendations for Healthcare Providers

- Clinicians should consider EVD in their differential diagnosis for any patient who has [signs and symptoms](#) consistent with Ebola virus infection (fever, severe headache, muscle pain, weakness, fatigue, vomiting, diarrhea, stomach pain, and unexplained bleeding) and has traveled to affected areas of Uganda within 21 days before the onset of symptoms (LHDs: see [CDC's Viral Hemorrhagic Fever \[VHF\] 2022 Case Definition](#)). **Healthcare and Emergency Medical System providers should routinely ask patients with acute and possibly infectious illness about recent international travel.**
- Returned travelers from Sub-Saharan Africa are at risk of acquiring other diseases that are endemic in the region (e.g., malaria, yellow fever, dengue, rickettsial infections, typhoid, hepatitis A), so workup of other diseases should be undertaken concurrently.
- **If there is suspicion for EVD in a patient based on symptoms and travel within the last 21 days to affected areas in Uganda, healthcare providers should immediately notify their LHD (24/7) and take EVD specific [infection prevention and control precautions](#).** These precautions include: immediate isolation of the patient in a private room with an in-room bathroom or covered bedside commode. Healthcare provider contact with the patient should be limited to providing essential patient care; any persons having contact with the patient should practice appropriate precautions and use appropriate [Personal Protective Equipment \(PPE\)](#). Procedures that could create splashes or increase environmental contamination with infectious material or create aerosols should be minimized. If aerosol generating procedures are needed, they should be conducted in an Airborne Infection Isolation Room (AIIR) when feasible. All healthcare provider contacts should be rigorously documented.
- The mainstay of treatment for EVD involves supportive care to prevent intravascular volume depletion, avoiding complications of shock, and correcting electrolyte abnormalities.
- No vaccines or therapeutics have been approved for prevention or treatment of EVD due to Sudan virus. The Ebola vaccine licensed in the United States ([ERVEBO,® Ebola Zaire Vaccine, Live, also known as V920, rVSVΔG-ZEBOV-GP or rVSV-ZEBOV](#)) is indicated for the prevention of EVD due to Ebola virus (species *Zaire ebolavirus*), and is not expected to protect against Sudan virus or other viruses in the *Ebolavirus* genus.

Laboratory and Biosafety Considerations

- The [Biofire FilmArray NGDS Warrior Panel](#) is the only assay available for detection of Sudan virus (it can also detect Ebola, Tai Forest, Bundibugyo, and Reston viruses). This test is not available at commercial or clinical laboratories. California laboratories currently using the BioFire Warrior Panel include the Los Angeles County Public Health Laboratory (PHL) and Cedars-Sinai Medical Center, a Regional Treatment Center for Ebola. The California Department of

Public Health Viral and Rickettsial Disease Laboratory is working closely with the CDC to implement the Biofire Warrior Panel.

- **The decision to test for EVD must be made in conjunction with the patient's clinical care team, the LHD, CDPH, and CDC's Viral Special Pathogens Branch (VSPB).**
- All personnel handling specimens from patients with suspected EVD (especially patients with travel history to Uganda three weeks before symptom onset) should adhere to recommended [infection control practices](#) to prevent infection and transmission among laboratory personnel.
- As a component of the Occupational Safety and Health Administration's (OSHA's) Bloodborne Pathogens Standard, laboratories handling blood and body fluids must have an [Exposure Control Plan](#) in place to eliminate or minimize employees' risk of exposure to pathogens.
- Laboratories should conduct [extensive risk assessments](#) to identify and mitigate hazards associated with handling Ebola specimens. The [proper PPE](#) needs to be identified, available, and staff trained to properly don and doff their PPE. Staff need to be specially trained, have passed [competency testing](#), and attended drills to safely receive, handle, and process these specimens.
- A laboratory should have dedicated space, equipment for handling and testing specimens from ill patients, and plans for minimizing specimen manipulation.
- A [waste management plan](#) needs to be in place for lab reagents and Category A waste, including PPE and sample material.
- If a facility does not have the appropriate risk mitigation capabilities, then the specimen should be forwarded to another facility that does.

Additional Resources:

- [CDPH Guidance for Local Health Departments](#)
- [CDPH Guidance for Healthcare Providers](#)
- [CDPH Guidance for the Public](#)
- [CDC Ebola Virus Disease](#)
- [CDC Viral Hemorrhagic Fever \(VHF\) 2022 Case Definition](#)
- [CDC Interim Guidance on Risk Assessment and Management of Persons with Potential Ebola Virus Exposure](#)
- [CDC Infection Prevention and Control Recommendations for Hospitalized Patients Under Investigation \(PUIs\) for Ebola Virus Disease \(EVD\) in U.S. Hospitals](#)
- [CDC Ebola Personal Protective Equipment \(PPE\)](#)
- [CDC Ebola PPE Training](#)
- [CDC Screening Patients / Case Definitions](#)
- [CDC Ebola Waste Management](#)
- [WHO Ebola Virus Disease](#)
- [WHO News: EVD caused by Sudan virus - Uganda](#)