

Ebola Outbreak Update for Virginia Hospitals

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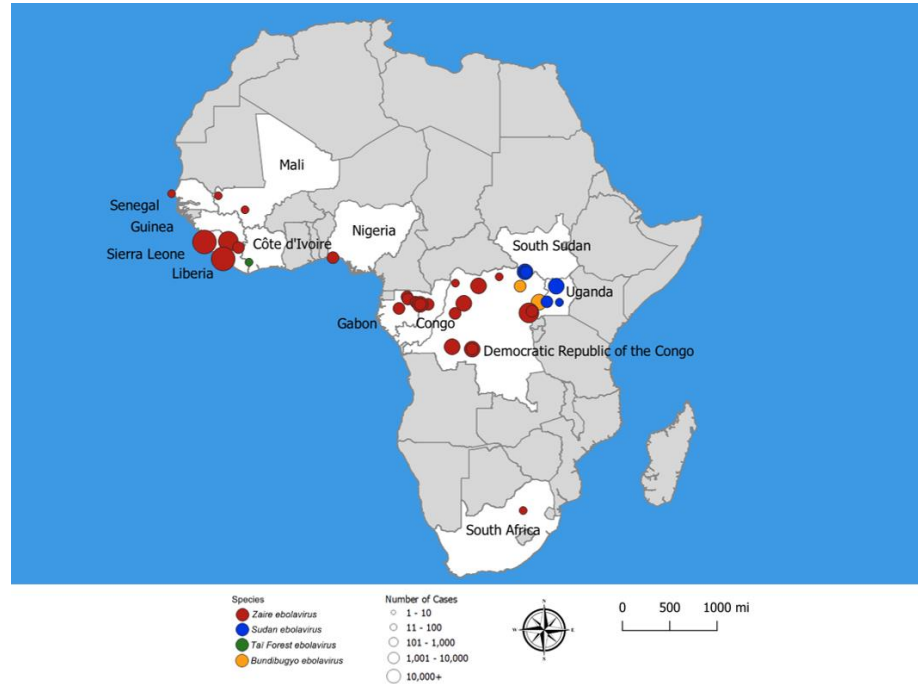
Virginia Department of Health
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Ebola Virus Disease (EVD): Key Facts

- Spread by contact with body fluids, contaminated objects, or infected animals
- Symptoms start 2-21 days after exposure, average of 8-10 days
 - Fever, headache, fatigue, muscle pain, joint pain, abdominal pain, rash, diarrhea, vomiting, or unexplained bleeding
- Not infectious until symptoms start
- Testing typically limited to laboratory response network (LRN) labs, including DCLS, and CDC
- Medical countermeasures (vaccines, therapeutics) depend on strain



Ebola Virus Disease Cases by Species (1976-2021)



Ebola Outbreak in Uganda

- Outbreak announced on Sep 20, 2022 for Mubende District (central Uganda)
- As of Oct 6, 44 confirmed cases, 10 confirmed deaths, and 20 probable deaths across 5 affected districts in central Uganda
- Caused by *Sudan ebolavirus* (Sudan virus)
 - Sudan virus requires special test
 - No approved vaccines or therapeutics



Risk Assessment

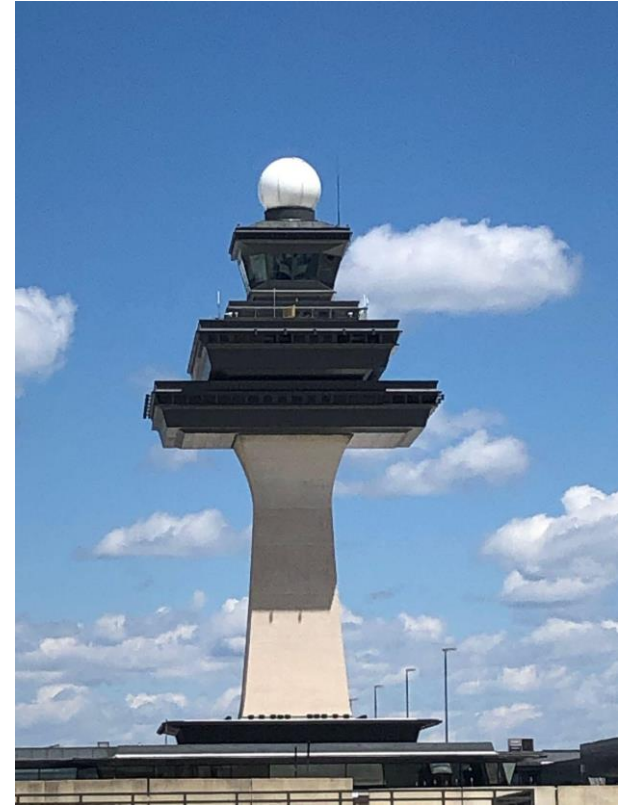
- WHO assesses regional and global risk as **low**
- **No** reported cases in United States
- CDC issued travel alerts:
 - On September 23- Level 1 travel alert: Practice Usual Precautions Areas
 - On October 4- upgraded to Level 2 travel alert: Practice Enhanced Precautions (avoid non-essential travel)
- VDH anticipates CDC recommendations for public health to conduct post-arrival assessment or monitoring of travelers from outbreak-affected areas; however, no information or detail is available at this time.

Enhanced Screening at Designated U.S. Airports

- Per the US Department of State, effective October 6 at 11:59 p.m, all U.S. bound passengers who have been in Uganda in the past 21 days will be routed to 1 of 5 airports for enhanced screening
 - Washington (IAD), New York (JFK), Newark (EWR), Atlanta (ATL), and Chicago (ORD)
 - 5 airports expected to receive ~140 travelers per day

Dulles Airport Procedures

- CDC recommendations are pending
- Based on previous situations, VDH anticipates that travelers from Uganda will be:
 - Screened for symptoms
 - Asked about exposures
 - Asked to confirm contact information
 - Given written instructions on steps to take
- Travelers who appear ill will be referred for further evaluation
- VDH is preparing for Traveler Monitoring



Healthcare Facility Patient Screening

- Ensure a screening processes is established to identify a potentially infectious patient:
 - Get a travel history
 - Look for Ebola risk factors
 - Ask about signs or symptoms of EVD
- Immediately isolate a patient with relevant travel, risk factors, and signs and symptoms of EVD
- Adhere to infection prevention and control procedures
- Notify infection prevention program and the local health department



Screening Patients: Travel History

- Travel history questions
 - Have you been to an area with [an active Ebola virus outbreak](#) in the past 21 days?
 - Have you been in close contact with someone confirmed to have EVD or with someone suspected to have EVD?
 - While traveling abroad, did you attend a funeral?
 - While traveling abroad, did you care for someone who was sick?
 - While traveling abroad, did you have any contact with animals, domestic or wild?

Screening Patients: Epidemiologic Risk Factors

In the 21 days before symptom onset:

- Contact w/ blood or body fluids (including contaminated objects) of acutely ill or dead persons with suspected or confirmed EVD without wearing appropriate PPE
- Participation in funeral rituals, including preparation of bodies for burial or touching a corpse at a traditional burial ceremony without wearing appropriate PPE
- Work in a lab handling human specimens without wearing appropriate PPE
- Handle wild animals or carcasses that may be infected (primates, fruit bats, duikers)
- Contact with semen from a man who has recovered from EVD (e.g., oral, vaginal or anal sex)
- Experience a breach in infection prevention and control precautions that result in the potential for percutaneous, mucous membrane, or skin contact with the blood or body fluids of a patient with EVD while carrying out any of the above activities

Infection Control for PUIs

- Isolate patient in single room with private bathroom and keep door closed
 - Limit people from entering the room and maintain a log
- Use disposable medical equipment when possible
- Only perform necessary tests and procedures
- Perform hand hygiene frequently and ensure availability of supplies
- Follow [CDC guidelines](#) for cleaning, disinfection and managing waste
 - Use [EPA-registered disinfectant](#) effective against non-enveloped virus
 - Ebola virus waste is a Category A infectious substance and requires special [management](#)

Personal Protective Equipment (PPE)

- Follow Standard, Droplet, and Contact Precautions
- Ensure PPE fully covers skin, mucous membranes, and clothing to prevent exposure
- Use additional specific PPE depending whether patient has bleeding, vomiting, or diarrhea or is clinically unstable and/or requires invasive or aerosol-generating procedures
 - [PPE guidance](#) for a PUI who *has* obvious bleeding, vomiting or diarrhea OR is clinically *unstable* and/or will require invasive or AGPs OR has *confirmed* Ebola
 - [PPE guidance](#) for a PUI who has *no* obvious bleeding, vomiting or diarrhea AND is clinically *stable* and will *not* require AGPs
- Have onsite supervision and a trained observer to oversee PPE donning/doffing
 - Implement an exposure management plan with any potential exposures

DCLS Ebola Virus Testing

- 24/7 Ebola virus testing at DCLS after CDC testing approval
- For the current outbreak in Uganda, DCLS performs testing on whole blood (EDTA) specimens using a multiplex RT-PCR test on the BioFire FilmArray:
 - Warrior Panel assay: targets 5 species in the Ebola virus genus (*Sudan ebolavirus*, *Zaire ebolavirus*, *Tai Forest ebolavirus*, *Reston ebolavirus*, *Bundibugyo ebolavirus*)
 - A positive Ebola virus detection on the Warrior Panel will not distinguish which species of Ebola virus is detected
- **Presumptive Positive results** = Additional testing performed at CDC
- **Negative results** = No additional testing required if specimens were collected ≥ 72 hours from symptom onset
 - Negative results for specimens collected less than 72 hours from symptom onset REQUIRE testing of a new specimen collected after 72 hours from symptom onset



DCLS Ebola Virus Testing Workflow

1st Testing Tier (Day 1)

Ebola virus multiplex RT-PCR testing

- whole blood (EDTA) specimens (purple-top blood tube)
- specimens collected before or after 72 hours from symptom onset
- **results TAT: approximately 1.5-2 hours after testing is initiated**

2nd Testing Tier (Day 2)

Malaria real time PCR testing

- whole blood (EDTA) specimens (purple-top blood tube)
- detects *Plasmodium* species: *P. falciparum*, *P. malariae*, *P. vivax* or *P. ovale*
- specimens collected concurrently with initial specimen for Ebola virus testing
- **results TAT: approximately 4-5 hours after testing is initiated**

Influenza/COVID-19 multiplex real time RT-PCR testing

- NP or nasal swabs in VTM
- specimens collected concurrently with initial blood specimen
- **results TAT: approximately 2-3 hours after testing is initiated**

3rd Testing Tier (Day 3)

Repeat Ebola virus multiplex RT-PCR testing

- whole blood (EDTA) specimens (purple-top blood tube)
- specimens collected after 72 hours from symptom onset

4th Testing Tier (Day 4)

BioFire GI Pathogen Panel

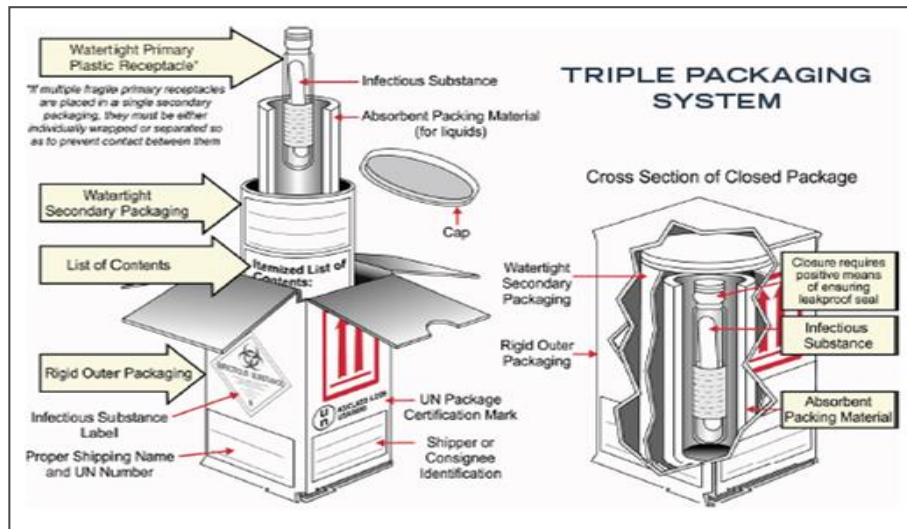
- raw stool specimen in sterile specimen cup
- *** testing only provided as a last resort when Ebola virus disease has been ruled out and the Ebola Treatment Centers are not able to perform***



Specimen Submission to DCLS

SPECIMEN SUBMISSION

- DCLS can provide Ebola specimen collection and shipping kits to Ebola Assessment and Treatment Centers, hospitals servicing CDC's Quarantine Station at Dulles airport, and the 35 Health Districts
- Ebola kits include purple-top blood tubes, secondary containers, ice packs, shipper declaration paper, DCLS Test Request Form and insulated Category A/UN2814 shippers
- A completed DCLS test request form is **REQUIRED**:
<https://dgs.virginia.gov/globalassets/document-center/dcls-forms/dcls-test-request-form-16857-4.pdf>

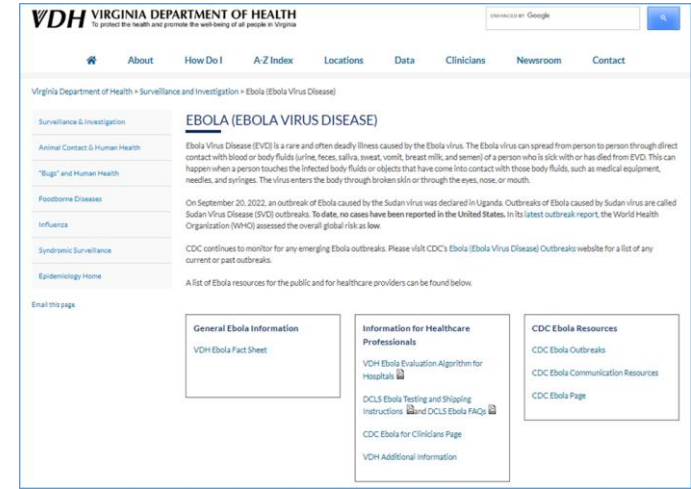


SPECIMEN TRANSPORT

- DCLS will provide 24/7 emergency courier transport upon CDC testing approval (**Do not ship Ebola specimens via DCLS routine courier service**)
- Specimens **MUST** be shipped refrigerated on ice packs
- Ebola specimens **MUST** be triple packaged by staff certified to package Category A specimens, according to IATA and DOT infectious substance regulations
- Shipping Declaration paper is provided with the Ebola shipping kits

Key Resources: VDH Website

- Ebola Fact Sheet
- Ebola Evaluation Algorithm for Hospitals
- DCLS Ebola Testing and Specimen Shipping Instructions and FAQs
- Additional Information for healthcare providers (links to key CDC documents)
- How to locate and contact your local health department for consultation

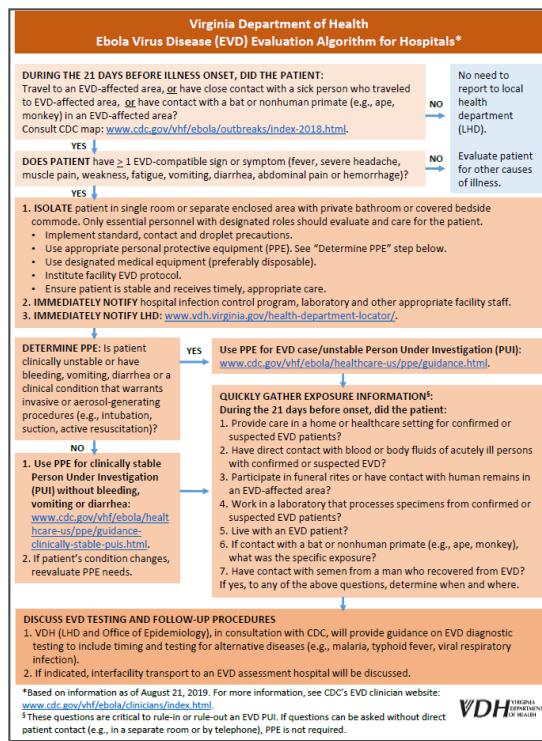


For public: www.vdh.virginia.gov/surveillance-and-investigation/ebola/

For HCP: www.vdh.virginia.gov/epidemiology/ebola-information-for-healthcare-professionals/

For EMS: www.vdh.virginia.gov/emergency-medical-services/ebola/

VDH Ebola Evaluation Algorithm for Hospitals



Recommended Steps to Take Now

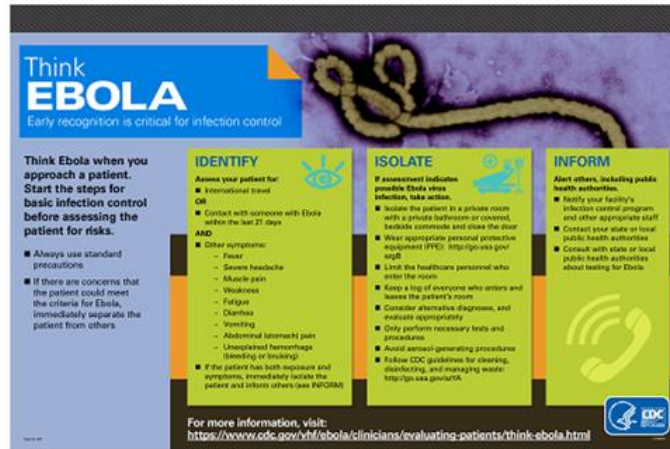
- Assess travel history with triage
- Review infection prevention and control policies and procedures for alignment with CDC guidance and re-train staff as needed
 - Post [signage](#) about infection control measures
 - Ensure availability of appropriate PPE and other infection control supplies ([PPE Calculator Tool](#))
 - Review PPE donning and doffing procedures
 - Review environmental cleaning protocols
- Assign internal points of contact and subject matter experts
- Ensure staff know how to contact infection control and the [local health department](#)

Take Home Messages

- Current risk of EVD spreading globally is low
- U.S. health care facilities should be prepared to promptly identify a Person Under Investigation for Ebola (PUI), isolate him or her, and rapidly notify infection control staff and the local health department
- A detailed travel history is critical in identifying a PUI
 - Use CDC [outbreak map](#) or [travel notices](#) for most current information on outbreak-affected areas
 - Identify specific locations, dates, and activities

Resources

- VDH Ebola website <http://www.vdh.virginia.gov/surveillance-and-investigation/ebola/>
- CDC EVD website for clinicians <https://www.cdc.gov/vhf/ebola/clinicians/index.html>
- CDC EVD Infection Prevention and Control <https://www.cdc.gov/vhf/ebola/clinicians/evd/infection-control.html>
- CDC PPE Guidance <https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/index.html>
- CDC Ebola Outbreaks <https://www.cdc.gov/vhf/ebola/outbreaks/index-2018.html>
- CDC Think Ebola webpage and poster <https://www.cdc.gov/vhf/ebola/clinicians/evaluating-patients/think-ebola.html>



- National Emerging Special Pathogens Training & Education Center (NETEC) [NETEC.org](https://www.netec.org)
- WHO Disease Outbreak News <https://www.who.int/emergencies/disease-outbreak-news>

Thank you!

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Extra slides

PPE for Ebola PUI or Confirmed Ebola

PUI who is clinically stable, will NOT require invasive or aerosol-generating procedures (e.g., intubation, suctioning, active resuscitation) procedures and NOT exhibiting obvious bleeding, vomiting, or diarrhea:

- Single-use (disposable) fluid-resistant gown that extends to at least mid-calf or single-use (disposable) fluid-resistant coveralls without integrated hood
- Single-use (disposable) full face shield
- Single-use (disposable) facemask
- Single-use (disposable) gloves with extended cuffs. Two pairs of gloves should be worn. At a minimum, outer gloves should have extended cuffs.
- For further details see: <https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html>

Patient with confirmed Ebola or a PUI who is clinically unstable, and/or WILL require invasive or aerosol-generating procedures (e.g., intubation, suctioning, active resuscitation):

- Impermeable garment:
 - Single-use (disposable) impermeable gown extending to at least mid-calf OR single-use (disposable) impermeable coverall.
- Single-use (disposable) N95 (with surgical hood to shoulders and full face shield) or PAPR (with full face shield, helmet or headpiece and covered with disposable hood extending to shoulders)
- Single-use (disposable) exam gloves with extended cuffs - two pairs so that a soiled outer glove can be safely removed and replaced during patient care
- Single-use (disposable) boot covers
- Single-use (disposable) apron - to cover torso to mid-calf (patients with vomiting or diarrhea)
- For further details see: <https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html>