

# Update for Virginia Hospitals on the Ebola Outbreak in the Democratic Republic of the Congo

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# Ebola Outbreak in DRC



- Risk in DRC = very high
- Risk among countries bordering DRC affected areas = very high
- Risk at global level = low

# Comparison of Ebola Outbreaks

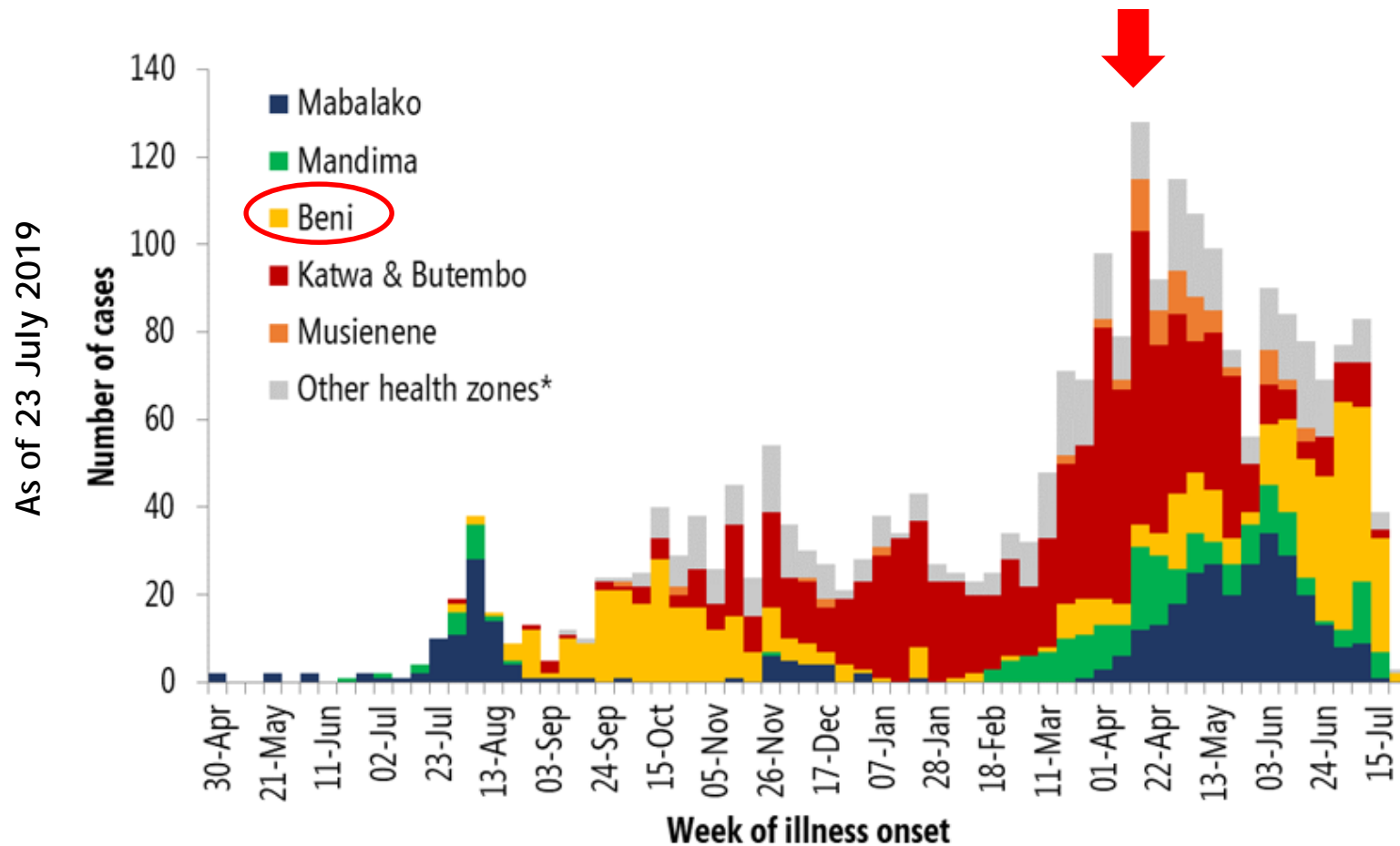
Location	Cases	Deaths
DRC	2,753*	1,843*
<i>West Africa</i>	<i>28,652</i>	<i>11,325</i>

# Low Risk to United States

- Low number of travelers from DRC
- Entry and exit screening in DRC
  - Goma Airport
  - >70 entry points - land borders
- No direct flights

# Epidemic Curve

Visual display of onset of illness among cases associated with outbreak



5 Image source: <https://www.who.int/csr/don/25-july-2019-ebola-drc/en/>

# Outbreak Response

- Find, isolate, diagnose, treat cases
  - Surveillance
  - RCT comparing 4 therapeutics
  - Case management
- Prevent transmission
  - Infection control
  - Contact tracing, ring vaccination, quarantine
  - DRC border screening
- Community engagement and education
  - Safe and dignified burials
  - Vaccine acceptance

# Factors Impeding Response

1. Complex political environment and lack of security → fear and distrust
2. Reluctance in community → delays in case detection and isolation
3. Population movement in highly densely populated areas → challenges in contact tracing
4. Infection and prevention control practices → nosocomial transmission

# WHO Public Health Emergency of International Concern - July 2019

- Possible increased national and regional risks
  - Uganda - 3 cases in June but no further spread
  - In DRC - cases in 3 new health zones; Goma
- Need for intensified and coordinated international response
  - Neighboring countries: Specific steps to prepare
  - Other countries: Awareness and review protocols
    - Screening at U.S. airports or active monitoring of travelers not recommended at this time



# Hospital Preparedness: A Tiered Approach

Facility Tier	Minimum Capabilities	Number in Virginia
Frontline	Identify, triage, and isolate possible patients with Ebola	
Assessment	Receive and isolate a PUI and coordinate Ebola testing	6
Treatment	Care for and manage patient throughout disease process	2

# Identifying Persons Under Investigation for Ebola Virus Disease (PUI)

1. Was the person in an Ebola-affected area within 21 days before symptom onset?
  - Detailed travel history is key - CDC map:  
[www.cdc.gov/vhf/ebola/outbreaks/drc/east-drc-map.html](http://www.cdc.gov/vhf/ebola/outbreaks/drc/east-drc-map.html)
2. Did the patient have direct contact within the 21 days before the onset of symptoms with:
  - Blood or body fluids of a person with EVD
  - Objects contaminated with body fluids from a person with EVD
  - Semen from a man who recovered from EVD
  - Infected fruit bats or nonhuman primates
3. Does the patient have symptoms compatible with EVD?
  - Fever, severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage

# Infection Control for PUIs

- Isolate patient in single room with private bathroom
- Limit personnel who enter room
- Use standard, contact, and droplet precautions
  - PPE type depends on whether patient has vomiting, diarrhea or bleeding and is clinically stable or not
- Maintain log of people entering patient's room
- Limit visitors
- Establish procedures for monitoring and managing visitors

# Notify the Local Health Department

## HEALTH DEPARTMENT LOCATOR

Enter Your Address or  Search radius  Results

Zip Code

### [Richmond City Health Department](#)

400 East Cary St.  
Richmond Virginia 23219

**Phone:** 804-205-3500  
**Fax:** 804-371-2207

[Business Hours \(Call For Information\)](#) ▼

[Directions](#)

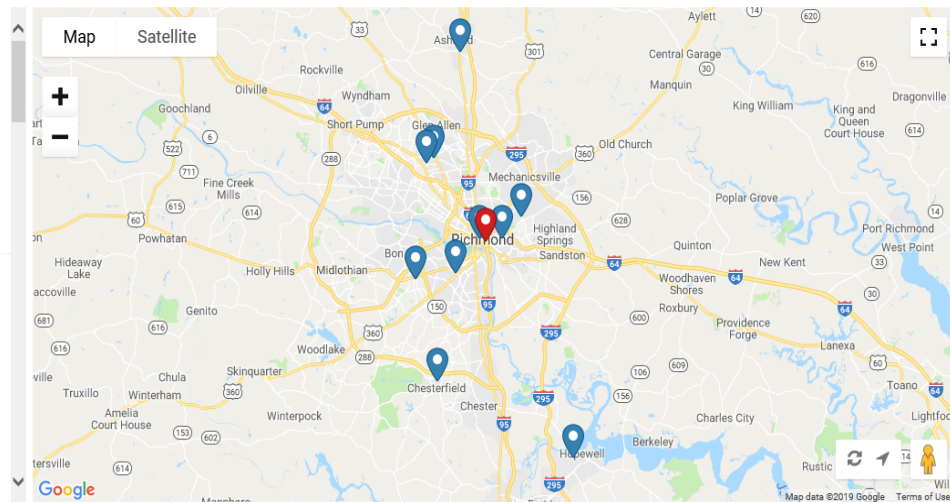
### [Richmond City Health Department – WIC Community Hospital](#)

1510 North 28th St.  
Suite 208  
Richmond Virginia 23223

**Phone:** 804-786-3201  
**Fax:** 804-225-7359

[Business Hours \(Call For Information\)](#) ▼

[Directions](#)



# TOOLS FOR HEALTHCARE SYSTEMS

# Assessing Viral Hemorrhagic Fever (VHF) Risk in a Returning Traveler

The screenshot shows a CDC webpage titled "Assessing Viral Hemorrhagic Fever Risk in a Returning Traveler". The page is part of a navigation structure: CDC > Viral Hemorrhagic Fevers (VHFs) > Information for Specific Groups > Information for Healthcare Workers. A left sidebar contains a menu with categories: "Viral Hemorrhagic Fevers (VHFs)", "Virus Families", "Information for Specific Groups", "Information for Working and Living Abroad", "Information for Healthcare Workers", "Assessing Viral Hemorrhagic Fever Risk in a Returning Traveler" (highlighted), "Assessing Fever in a Returning Traveler with No Risk of Viral Hemorrhagic Fever", "Diagnoses for Consideration in a Returning Traveler with Fever", "Infection Control for Viral Haemorrhagic Fevers in the African Health Care Setting", and "Diseases". The main content area features the title "Assessing Viral Hemorrhagic Fever Risk in a Returning Traveler" and the acronym "CALM: Consider, Act, Laboratory, Monitor". A paragraph explains that the CALM algorithm is for use by Emergency Room clinicians to assess patients with signs, symptoms, and/or diagnostic findings for possible VHF, covering common types like Ebola, Marburg, Lassa, and Crimean-Congo Hemorrhagic Fever (CCHF) viruses. A note states the algorithm is not a comprehensive guideline and should be used with hospital policies. Two buttons, "Open All" and "Close All", are present. Below are four expandable sections: "C: Consider Risk Factors for Viral Hemorrhagic Fever", "A: Act", "L: Laboratory Examination", and "M: Monitor Contacts", each with a plus sign to its right.

Viral Hemorrhagic Fevers (VHFs)

CDC > Viral Hemorrhagic Fevers (VHFs) > Information for Specific Groups > Information for Healthcare Workers

Information for Healthcare Workers

## Assessing Viral Hemorrhagic Fever Risk in a Returning Traveler

### CALM: Consider, Act, Laboratory, Monitor

The CALM algorithm is for use by Emergency Room clinicians in assessing a patient with signs, symptoms, and/or diagnostic findings concerning for a possible viral hemorrhagic fever (VHF). While there are many types of VHFs, all of which are rare, this algorithm covers the relatively more common types seen globally: Ebola virus, Marburg virus, Lassa virus, and Crimean-Congo Hemorrhagic Fever (CCHF) virus.

This algorithm is not intended to be a comprehensive guideline, and should be used in conjunction with your hospital's established policies for managing suspect/confirmed VHFs.

Open All Close All

- C: Consider Risk Factors for Viral Hemorrhagic Fever +
- A: Act +
- L: Laboratory Examination +
- M: Monitor Contacts +

# Assessing Fever in a Returning Traveler with No Risk of VHF

**Viral Hemorrhagic Fevers (VHFs)**

CDC > Viral Hemorrhagic Fevers (VHFs) > Information for Specific Groups > Information for Healthcare Workers

Home Viral Hemorrhagic Fevers (VHFs)

- Virus Families +
- Information for Specific Groups -**
  - Information for Working and Living Abroad +
  - Information for Healthcare Workers -**
    - Assessing Viral Hemorrhagic Fever Risk in a Returning Traveler
    - Assessing Fever in a Returning Traveler with No Risk of Viral Hemorrhagic Fever**
    - Diagnoses for Consideration in a Returning Traveler with Fever
    - Infection Control for Viral Haemorrhagic Fevers in the African Health Care Setting

## Assessing Fever in a Returning Traveler with No Risk of Viral Hemorrhagic Fever

**TOUR: Treat patient, Obtain history, Urine/blood work, Rule out malaria**

This TOUR algorithm is for use by Emergency Room clinicians in assessing a patient with signs, symptoms, and/or diagnostic findings concerning for a possible infectious disease acquired during travel outside of the United States of America.

This algorithm is not intended to be a comprehensive guideline, and should be used in conjunction with your hospital's established policies for managing fever in a returning traveler.

[Open All](#) [Close All](#)

- T: Treat patient (clinical stabilization) +
- O: Obtain history and physical examination +
- U: Urine/blood work (and radiology) +
- R: Rule out malaria and other infectious diseases +

# Malaria

- Leading cause of travel-related hospitalization and death
- Early diagnosis and treatment is critical to improve outcomes
- CDC Malaria Hotline (770-488-7788) or toll free at 855-856-4713 from 9am to 5pm Eastern time
  - After hours or on weekends and holidays, clinicians requiring assistance should call the CDC Emergency Operations Center at 770-488-7100 and ask the operator to page the person on call for the Malaria branch



# Checklist for Healthcare Facilities

- Stay informed
- Ensure availability of appropriate PPE and other infection control supplies
- Review infection control policies for consistency with CDC guidance
- Review environmental cleaning procedures and provide refresher training for cleaning staff
- Begin education and refresher training for healthcare personnel
- Review triage procedures and ensure relevant questions are asked during triage process for patients with compatible symptoms
- Ensure laboratories review procedures for appropriate specimen collection, transport, and testing of specimens
- Review policies and procedures for screening and work restrictions for exposed or ill healthcare personnel, and ensure that HCP have ready access to medical consultation, including by phone
- Designate points of contact responsible for communicating with local health department and providing internal updates for HCPs and volunteers

# Take Home Messages

- Risk of Ebola virus spreading is very high within eastern DRC and its neighboring countries
- Risk of Ebola virus spreading globally is low
- U.S. health care facilities should be prepared to identify a Person Under Investigation for Ebola (PUI), isolate him or her, and inform the local health department
- A detailed travel history is critical in identifying a PUI
  - Identify specific locations, dates, and activities
  - Use CDC outbreak map for most up-to-date information on Ebola-affected areas

# Resources

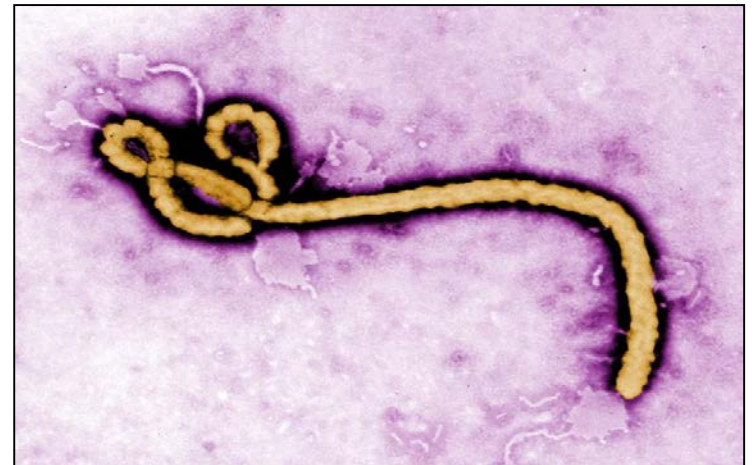
- VDH Ebola webpage <http://www.vdh.virginia.gov/ebola>
- Virginia local health departments webpage <http://www.vdh.virginia.gov/local-health-districts/>
- CDC map of 2018 DRC outbreak area <https://www.cdc.gov/vhf/ebola/outbreaks/drc/east-drc-map.html>
- CDC EVD website for clinicians <https://www.cdc.gov/vhf/ebola/clinicians/index.html>
- CDC Interim Guidance for U.S. Hospital Preparedness for Patients Under Investigation (PUIs) or with Confirmed Ebola Virus Disease (EVD) <https://www.cdc.gov/vhf/ebola/healthcare-us/preparing/hospitals.html>
- CDC malaria information <https://www.cdc.gov/parasites/malaria/index.html>
- WHO Ebola outbreak situation reports <https://www.who.int/ebola/situation-reports/drc-2018/en/>
- National Ebola Training and Education Center <https://netec.org/>
  - Identify, Isolate, Inform: Assessment, management, and placement of PUI <https://courses.netec.org/courses/pui-101>

**THANK YOU!**

# EXTRA SLIDES

# Ebola Virus Disease (EVD): Key Facts

- Spread by contact with body fluids or contaminated objects
- Symptoms start 2-21 days after exposure
  - Fever, headache, fatigue, muscle pain, joint pain, abdominal pain, rash, diarrhea, vomiting, or unexplained bleeding
- Not infectious until symptoms start
- No FDA-approved vaccine or treatment



# Ebola Virus Ecology and Transmission

Ebola virus disease is a zoonotic disease. Zoonotic diseases involve animals and humans.

## Animal-to-Animal Transmission

Evidence suggests that bats are the reservoir hosts for the Ebola virus. Bats carrying the virus can transmit it to other animals, like apes, monkeys, and duikers (antelopes), as well as to humans.

## Spillover Event

A "spillover event" occurs when an animal (bat, ape, monkey, duiker) or human becomes infected with Ebola virus through contact with the reservoir host. This contact could occur through hunting or preparing the animal's meat for eating.

## Human-to-Human Transmission

Once the Ebola virus has infected the first human, transmission of the virus from one human to another can occur through contact with the blood and body fluids of sick people or with the bodies of those who have died of Ebola.

## Survivor

Ebola survivors face new challenges after recovery. Some survivors report effects such as tiredness and muscle aches, and can face stigma as they re-enter their communities.

