

Maintaining Preparedness for Emerging Diseases of Public Health Concern

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Emerging and Re-Emerging Diseases

Public health's role in an outbreak of emerging disease

Is this an outbreak?

What is the potential impact?

What controls can be placed to prevent spread of disease?

Could this be an act of terrorism?

Epidemiological investigation & on-going surveillance for cases

Inform, educate & coordinate with healthcare community, first responders, officials & public

Isolate ill persons

Provide preventive treatment

Quarantine & monitor exposed

Environmental health monitoring & controls

Assistance with sheltering; mortuary support; mass care

Special Pathogens

- Highly infectious agents that cause severe disease
 - High morbidity and/or mortality
 - High likelihood of secondary cases
 - Lack effective vaccine, prophylaxis or treatment
 - Might prompt use of biocontainment unit

EVD Outbreak in the Democratic Republic of the Congo (DRC)

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

Outbreak Response

- Find, isolate, diagnose, treat cases
- Prevent transmission
 - Infection control
 - Contact tracing, vaccination, quarantine
 - DRC border screening
- Community engagement and education
 - Safe and dignified burials
 - Vaccine acceptance

Epidemic Curve

Visual display of onset of illness among cases associated with outbreak

Factors Impeding Response

- Complex political environment and lack of security → fear and distrust
- Reluctance in community → delays in case detection and isolation
- Population movement in highly densely populated areas → challenges in contact tracing
- Infection and prevention control practices → nosocomial transmission
- Other concurrent outbreaks (e.g., measles, monkeypox) → further strain on resources

Low Risk to United States

- Low number of travelers from DRC
- Entry and exit screening in DRC
 - Goma Airport
 - >110 entry points - land borders
- No direct flights to United States

Dulles International Airport Planning

- Entry screening at U.S. airports or active monitoring of travelers not recommended at this time
 - Federal authorities decide if warranted
 - Dulles International Airport would be 1 of 6 sites
- Core planning group of Metropolitan Washington Airports Authority, Airport Operations, CDC Dulles Quarantine Station, Customs and Border Protection, and VDH
 - Nearby hospitals and local health departments also engaged in planning efforts

Planning for Entry Screening at Dulles International Airport

Tools to Identify, Isolate, and Inform for Possible EVD Patient

VDH

- Ebola Evaluation Algorithm
www.vdh.virginia.gov/ebola
- Local Health Department
www.vdh.virginia.gov/health-department-locator/

CDC

- Assessing Viral Hemorrhagic Fever (VHF) Risk in a Returning Traveler
- Assessing Fever in a Returning Traveler with No Risk of VHF
- www.cdc.gov/vhf/ebola/clinicians/index.html

The image displays two web-based tools from the Virginia Department of Health (VDH). The top tool is the 'Ebola Virus Disease (EVD) Evaluation Algorithm for Hospitals*'. It is a flowchart that guides healthcare providers through the process of identifying and managing potential EVD cases. It starts with a decision point: 'DURING THE 21 DAYS BEFORE ILLNESS ONSET, DID THE PATIENT: Travel to an EVD-affected area, or have close contact with a sick person who traveled to EVD-affected area, or have contact with a bat or nonhuman primate (e.g., ape, monkey) in an EVD-affected area?'. If 'NO', it states 'No need to report to local health department'. If 'YES', it leads to 'DOES PATIENT have muscle pain, weakness, or other symptoms?'. If 'YES', it leads to '1. ISOLATE patient in a private room with a dedicated bathroom. Only essential personnel should enter. Implement standard and contact precautions. Use appropriate personal protective equipment (PPE). Institute facility disinfection protocol. Ensure patient is isolated from other patients and staff.' If 'NO', it leads to '2. IMMEDIATELY NOTIFY LOCAL HEALTH DEPARTMENT'. Both paths lead to '3. IMMEDIATELY NOTIFY STATE HEALTH DEPARTMENT'. The bottom tool is the 'HEALTH DEPARTMENT LOCATOR'. It features a search bar, a map of Virginia, and a list of health departments. The map shows various locations across the state, with a red pin indicating the selected location. The list includes details such as the health department name, address, phone number, and fax number.

Virginia Department of Health
Ebola Virus Disease (EVD) Evaluation Algorithm for Hospitals*

DURING THE 21 DAYS BEFORE ILLNESS ONSET, DID THE PATIENT:
Travel to an EVD-affected area, or have close contact with a sick person who traveled to EVD-affected area, or have contact with a bat or nonhuman primate (e.g., ape, monkey) in an EVD-affected area?
Consult CDC map: [www.cdc.gov/ebola](#)

NO → No need to report to local health department

YES ↓

DOES PATIENT have muscle pain, weakness, or other symptoms?

YES ↓

1. ISOLATE patient in a private room with a dedicated bathroom. Only essential personnel should enter. Implement standard and contact precautions. Use appropriate personal protective equipment (PPE). Institute facility disinfection protocol. Ensure patient is isolated from other patients and staff.

2. IMMEDIATELY NOTIFY LOCAL HEALTH DEPARTMENT

3. IMMEDIATELY NOTIFY STATE HEALTH DEPARTMENT

DETERMINE PPE: Is patient clinically unstable or bleeding, vomiting, or diarrhea?

NO ↓

1. Use PPE for clinically stable Person Under Investigation (PUI) without bleeding, vomiting or diarrhea:
www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html

2. If patient's condition changes, reevaluate PPE needs.

2. Have direct contact with blood or body fluids of acutely ill persons with confirmed or suspected EVD?

3. Participate in funeral rites or have contact with human remains in an EVD-affected area?

4. Work in a laboratory that processes specimens from confirmed or suspected EVD patients?

5. Live with an EVD patient?

6. If contact with a bat or nonhuman primate (e.g., ape, monkey), what was the specific exposure?

7. Have contact with semen from a man who recovered from EVD? If yes, to any of the above questions, determine when and where.

DISCUSS EVD TESTING AND FOLLOW-UP PROCEDURES

1. VDH (LHD and Office of Epidemiology), in consultation with CDC, will provide guidance on EVD diagnostic testing to include timing and testing for alternative diseases (e.g., malaria, typhoid fever, viral respiratory infection).

2. If indicated, interfacility transport to an EVD assessment hospital will be discussed.

*Based on information as of August 21, 2019. For more information, see CDC's EVD clinician website: www.cdc.gov/vhf/ebola/clinicians/index.html.
†These questions are critical to rule-in or rule-out an EVD PUI. If questions can be asked without direct patient contact (e.g., in a separate room or by telephone), PPE is not required.

VDH VIRGINIA DEPARTMENT OF HEALTH

EVD 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 PUI, isolate him or her, and immediately inform the local health department
- A detailed travel history is critical in identifying a PUI

Novel Influenza A: Key Facts

- Caused by influenza A virus subtypes that are different from currently circulating human H1 and H3 viruses
- Spread mainly by respiratory droplets

Antivirals might be effective; vaccine might not be widely available initially

Influenza Viruses of Special Concern

Avian influenza viruses

- H5 - H5N1
 - Highly pathogenic
- H7 - H7N9
 - Low pathogenic

Swine influenza/variant influenza A viruses

- H1N1v, H3N2v, H1N2v

Novel Influenza A in the United States

463 U.S. cases caused by

- **Influenza A H3N2v (n=427)**
- **Influenza A H1N2v (n=25)**
- **Influenza A H1N1v (n=10)**
- **Influenza A H7N2 (n=1)**

E-cigarette or Vaping Associated Lung Injury (EVALI)

- Cough, chest pain, shortness of breath, GI
- Fever, chills, weight loss
- Develop over days to weeks

Lung infection does not appear to be causing the symptoms

E-Cigarette Product Use

EVALI Cases*

	United States	Virginia
Cases	1,479	60
Deaths	33	1
Male	70%	66%
Percent < 35 years old	79%	82%
<i>Exposure (# with available info)</i>	<i>849</i>	<i>25</i>
Used THC product	78%	76%
<i>Only used THC product</i>	<i>31%</i>	<i>11%</i>
Used nicotine product	58%	56%
<i>Only used nicotine product</i>	<i>10%</i>	<i>7%</i>

EVALI Take Home Messages

- Exposure history important
 - Ask about more than smoking or tobacco use
- CDC Interim Guidance for Clinicians
- Providers required to immediately report suspected cases to local health department
- www.vdh.virginia.gov/vaping

Staying Prepared

THANK YOU!

Resources

VDH

- Local health departments www.vdh.virginia.gov/local-health-districts/
- Ebola (includes VDH/VHHA webinar for hospitals on August 6, 2019) www.vdh.virginia.gov/ebola
- EVALI www.vdh.virginia.gov/vaping/

CDC

- Ebola map of DRC outbreak www.cdc.gov/vhf/ebola/outbreaks/drc/east-drc-map.html
- Ebola for clinicians www.cdc.gov/vhf/ebola/clinicians/index.html
- Malaria www.cdc.gov/parasites/malaria/index.html
- Pandemic flu www.cdc.gov/flu/pandemic-resources/
- *Outbreaks www.cdc.gov/outbreaks/index.html and Travel Notices wwwnc.cdc.gov/travel/notices
- EVALI www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html

WHO

- Ebola outbreak situation reports www.who.int/ebola/situation-reports/drc-2018/en/
- *Outbreaks www.who.int/csr/don/en/
- *Georgia Department of Health's Travel Clinical Assistant (TCA) dph.georgia.gov/TravelClinicalAssistant
- National Ebola Training and Education Center netec.org/
 - Identify, Isolate, Inform: Assessment, management, and placement of PUI courses.netec.org/courses/pui-101

* Resources to maintain awareness about domestic or international outbreaks