

#### **HEALTH CARE PROVIDER WEBINAR**

#### **EBOLA**

Education for Providers and Hospitals
12:00 – 1:00pm

November 29, 2022

# **Objectives**

- Describe the history of Ebola, clinical presentation and risk of infection
- Understand current US and New York State response to current Ebola Sudan outbreak
- Describe usage of Personal Protective Equipment
- Describe role of hospitals and transportation
- Describe laboratory testing and waste management



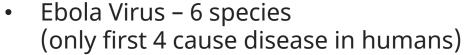
# History, Transmission, Clinical Presentation, and Current Situation

Jim McDonald M.D., MPH
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Health



# **History - Ebola**

- Filoviridae
  - Ebolavirus (enveloped virus)
  - Marburgvirus
  - Cuevavirus



- 1. Zaire
- 2. Sudan (Sudan Virus Disease case fatality about 50% historically)
- 3. Bundibugyo
- 4. Tai Forest
- 5. Reston
- 6. Bombali



- Ebola disease first described in 1976 near Ebola River in Democratic Republic of Congo
- Multiple outbreaks with high case fatality rate



# How is Ebola Transmitted – only while symptomatic

**Direct contact** (such as through broken skin or mucous membranes in the eyes, nose, or mouth) with:

- 1. Blood or body fluids (urine, saliva, sweat, feces, vomit, breast milk, amniotic fluid, and semen) of a person who is sick with or has died from Ebola virus disease (EVD).
- 2. Objects (such as clothes, bedding, needles, and medical equipment) contaminated with body fluids from a person who is sick with or has died from EVD.
- 3. Infected fruit bats or nonhuman primates
- 4. Semen from a man who recovered from EVD (through oral, vaginal, or anal sex)
- 5. Eating bush meat

https://www.cdc.gov/vhf/ebola/transmission/index.html

#### **Clinical Presentation:**

- Every system can be involved
- Incubation period 2-21 days (8-10 most common)

#### **Initially "Dry"**

- Abrupt onset fever/chills (≥100.4°F/38.0°C)
- Aches and pains
- Fatigue
- Sore throat
- Loss of appetite

#### Progresses to "Wet"

- Diarrhea
- Vomiting
- Unexplained hemorrhaging or bleeding



# **Clinical Lab Findings**

- Initial leukopenia, followed by elevation
- Thrombocytopenia (nadir day 6-8)
- Increased Hematocrit
- Elevated transaminases

- Prolonged PT/PTT
- Proteinuria, elevated
   Creatinine, BUN
- Electrolyte abnormalities



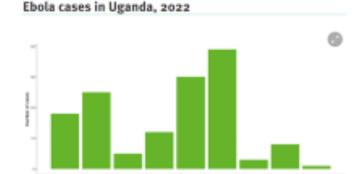
#### **Prevention and Treatment**

- There is no vaccine for Ebola Sudan
  - There is a vaccine for Ebola Zaire, the strain that caused the 2014-2016 West African outbreak.
  - Vaccine for Sudan strains are being tested in situ.
    - No ring vaccination after first cases in this Ugandan outbreak
- Treatment is primarily supportive
  - There are monoclonal antibody treatments for Ebola Zaire.



### Situation Update: November 21, 2022

- Per WHO, 141 confirmed cases, and 55 confirmed deaths in 9 districts of Uganda.
  - 19 healthcare workers infected, 7 have died.
  - Cases may be slowing.
- These cases are being caused by the "Sudan" strain of Ebola.
  - Most other Ebola outbreaks, including the large 2014-2016 West African outbreak, have been caused by the "Zaire" strain.
- Non-governmental organizations (NGOs) usually assist with Ebola outbreaks in Africa.
  - In 2014-2016, the individuals working for these organizations who returned to the US who were at the highest risk were quarantined.
  - In outbreaks in DRC in 2020 and 2021, NGOs were not onsite because of safety concerns.



Ebola cases in Uganda by week of report



# US and NY Response, and PUI Evaluation

Bryon Backenson MS
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Health



# **US (and NY) Traveler Monitoring**

- Travelers are screened for risk and symptoms before leaving Uganda. (screening 1)
- CDC is funneling all passengers from Uganda into 5 airports
  - JFK, Newark, Washington Dulles, Chicago O'Hare, and Atlanta Hartsfield.
  - No direct flights from Uganda
  - · Broken travel not captured
  - Travelers who fly to Canada then by land to US not captured
- Passengers going to those 5 airports are screened for risk and symptoms by CDC. (screening 2)
  - At JFK, if medical attention is warranted, they will be transported to hospitals in NYC or nearby that can accept these patients.
- NYSDOH gets daily lists from CDC of travelers from Uganda and, working with LHDs, contacts and monitors these individuals for up to 21 days.

(screening 3)

# High vs. Low Risk Travelers

	Been to Uganda	Been in Outbreak District/Area in Uganda	Reports High-Risk Exposure
Risk Assessment	Up to 3 times	Up to 3 times	Up to 3 times
Education	On symptoms, actions to take if ill	On symptoms, actions to take if ill	On symptoms, actions to take if ill
Monitoring	At least weekly, up to 21 days	At least twice weekly, up to 21 days	Daily
Movement Restrictions	None	None	Quarantine
Travel	Coordinated	Coordinated	None

# If an individual presents with symptoms, does that person warrant concern or testing? Do they meet the definition of a "Person Under Investigation (PUI)?

- Signs and symptoms consistent with EVD, and
- An epidemiological risk factor within 21 days before symptom onset
  - Travel to an outbreak area with EVD cases
  - High risk exposure criteria



# **Evaluating for PUI Status**

#### Signs and symptoms

- Fever
- Aches and pains, such as severe headache and muscle and joint pain
- Weakness and fatigue
- Sore throat
- Loss of appetite
- Gastrointestinal symptoms including abdominal pain, diarrhea, and vomiting,
- Unexplained hemorrhaging, bleeding, or bruising
- Red eyes
- Skin rash
- Hiccups

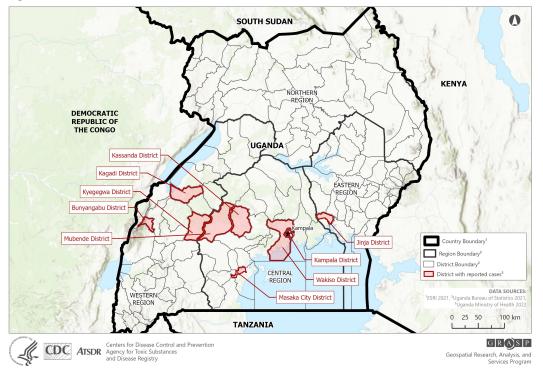


#### **Evaluation for PUI Status**

- Obtain a travel history from patients with symptoms of EVD:
  - Have you been to an area with an active Ebola virus outbreak in the past 21 days?
- Ask about high risk exposures:
  - Did you care for or been in close contact with someone suspected or confirmed to have EVD?
    - Includes being in contact with contaminated objects like bedding, clothing, needles, etc.
    - Did you wear and use PPE appropriately?
  - While in Uganda, did you participate in funeral rituals or touch dead bodies?
  - Have you had contact with semen from a man who has recovered from EVD?
  - While in Uganda, did you have any contact with animals, domestic or wild, particularly eating bush meat?

# Districts where Ebola transmission taking place:

**Uganda: Ebola Virus Disease Outbreak 2022** 



9 as of 23 Nov

https://www.cdc.gov/vhf/ebola/ outbreaks/uganda/2022sep.html



## **Evaluating for PUI Status**

- EVD is extremely unlikely unless patient had travel history to currently affected areas AND had high-risk exposures. Proceed with:
  - Routine care of the patient, including diagnostics and treatment
  - Routine procedures for infection prevention and control, including use of Standard and Transmission-based Precautions according to current diagnosis or differential diagnoses
    - https://www.cdc.gov/niosh/docket/archive/pdfs/niosh-219/0219-010107-siegel.pdf
  - Established procedures for public health reporting
    - NYS: <a href="https://www.health.ny.gov/professionals/diseases/reporting/communicable/">https://www.health.ny.gov/professionals/diseases/reporting/communicable/</a>
    - NYC: <a href="https://www.nyc.gov/site/doh/providers/reporting-and-services/notifiable-diseases-and-conditions-reporting-central.page">https://www.nyc.gov/site/doh/providers/reporting-and-services/notifiable-diseases-and-conditions-reporting-central.page</a>
- Stay up to date on areas currently affected. Check the CDC website: <a href="https://www.cdc.gov/vhf/ebola/outbreaks/uganda/2022-sep.html">https://www.cdc.gov/vhf/ebola/outbreaks/uganda/2022-sep.html</a>

#### If Patient Evaluation Indicates Possible EVD

#### Isolate the patient

- Place the patient in a room by themselves (private bathroom or covered bedside commode)
   with the door closed
  - If a facility has an airborne infection isolation room (AIIR), the room should be prioritized for care of patients who are PUIs or patients with confirmed or suspected EVD
    - Aerosol generating procedures (AGP) should be done in an AIIR, whenever feasible
  - A standard room may be used. HCP must use appropriate PPE.
    - If an AGP is done in a standard room, the procedure should be performed with the minimum number of people necessary in the room. The door should be closed, and all staff in the room should wear the appropriate PPE, which should include a properly fit-tested and fit-checked NIOSH-approved N95 or higher-rated respirator.
- Use only essential healthcare workers trained in their designated roles for patient care
- Keep a log of everyone who enters and leaves the patient's room.



#### If Patient Evaluation Indicates Possible EVD

#### Notify the Facility Infection Prevention and Control Program

- Use of appropriate PPE
- Hand hygiene
- Avoid AGPs, if possible
- Use dedicated equipment (disposable, when possible); clean and disinfect non-dedicated, nondisposable equipment according to the manufacturer's directions
- Limit use of needles/sharps, perform essential phlebotomy and laboratory testing only, use care
  in handling and disposal of sharps
- Perform effective and appropriate environmental cleaning and surface disinfection
- Adhere to safe injection practices
- Evaluate duration of infection control precautions on a case-by-case basis
- Monitor and manage potentially exposed personnel
- Manage visitation



## What if Evaluation for PUI Status is Equivocal?

#### Contact Public Health for Assistance:

- NYC providers can call the Provider Access Line at 866-692-3641.
- Providers outside of NYC can call their local health department using the phone number found here https://www.health.ny.gov/contact/contact\_information/
- If unable to reach the LHD where the patient resides, please contact the NYSDOH Bureau of Communicable Disease Control at 518-473-4439 during business hours or 866-881-2809 evenings, weekends, and holidays.

#### Examples:

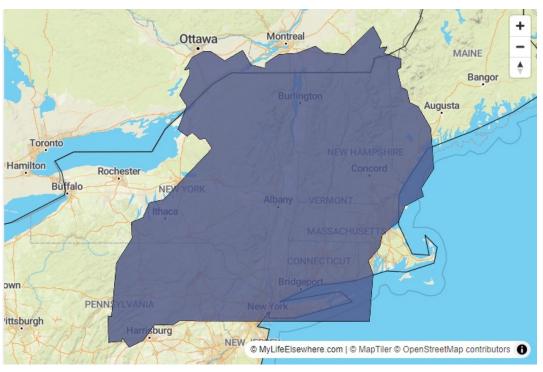
- A patient who reports travel to an affected area of Uganda, reports no risk factors, and presents with symptoms that could be EVD vs. an existing chronic condition
- A patient who traveled to Uganda (unsure if an affected area), attended a funeral, reports no risk factors and needs evaluation for an orthopedic injury



# **NY Traveler Monitoring**

- Have screened over 350 travelers so far
- All have been low risk
- No PUIs
- About 50 people being monitored on any given day
- HISTORY: In NY from 2014-2016, over 6200 travelers were evaluated and monitored, approximately 25 were high risk and quarantined, 1 was a case

# Africa is big:





# PPE, Expectations of Hospitals, and Transportation

Emily Lutterloh M.D., M.P.H Director, Division of Epidemiology New York State Department of Health



### **Summary of HCP PPE Recommendations**

Stable PUI, no bleeding, vomiting or diarrhea	Clinically unstable PUI, PUI with bleeding, vomiting, diarrhea or patient with confirmed EVD	
Fluid-resistant gown that extends to at least mid-calf or fluid-resistant coveralls without integrated hood*	Impermeable gown extending to at least mid-calf OR impermeable coverall*Coveralls without integrated hoods are preferred; coveralls with or without integrated socks are acceptable.	
Full face shield <u>and</u> facemask*	Respiratory, head, and face protection. Either a PAPR or disposable, NIOSH-certified N95 respirator should be worn in case a AGP needs to performed emergently.	
Exam gloves with extended cuffs. Two pairs of gloves should be worn. At a minimum, outer gloves should have extended cuffs*	Exam gloves with extended cuffs. Two pairs of gloves should be worn so that a heavily soiled outer glove can be safely removed and replaced during care. At a minimum, outer gloves should have extended cuffs*	
	Apron that covers the torso to the level of the mid-calf should be worn if patients are vomiting or have diarrhea, and if coverall has an exposed, unprotected zipper in the front*	
	Boot covers, shoe covers are acceptable only if they will be used in combination with a coverall with integrated socks*	
*single use, (disposable PPE) should be used whenever applicable		

https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/index.html

# **Personal Protective Equipment Training Videos**

Guidance for Donning and Doffing Personal Protective Equipment (PPE) During Management of Patients with Ebola Virus Disease in U.S. Hospitals

Select Your PPE Combination









PAPR & Gown



PAPR & Coverall





https://www.cdc.gov/vhf/ebola/hcp/ppe-training/index.html

#### **PPE Use**

- Guidance for clinically stable PUIs who do not have bleeding, vomiting, or diarrhea <a href="https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html">https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance-clinically-stable-puis.html</a>
- 2. Guidance for confirmed EVD patients, PUIs who are clinically unstable, or PUIs with bleeding, vomiting, or diarrhea <a href="https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html">https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html</a>

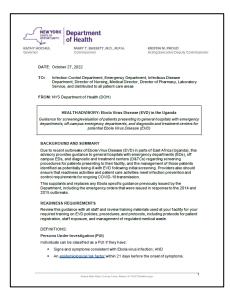


Frontline hospitals are encouraged to review the Health Advisory issued on October 27, 2022 regarding <u>Ebola Virus Disease (EVD)</u> in the Uganda.

The advisory includes readiness activities, policies, and procedures necessary to respond to potential encounters with individuals infected with EVD, including:

- Signage
- Communications
- Training Requirements
- PPE Supply
- Patient Registration/Screening Protocols

- Initial and Ongoing Patient Care
- Staff Exposure Logs
- Medical Waste & Decontamination
- Transportation





#### What to do if you have a patient present with suspected EVD

Screen any ill patient who presents with fever and additional symptoms of EVD. (ensure that screening for COVID-19 continues)

#### Clinical Criteria

- Fever > 100.4°F, and
- Additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage, weakness and fatigue, loss of appetite, red eyes, skin rash or hiccups

#### Epidemiologic Risk Factors

- Contact with blood or other body fluids of a patient known or suspected to have EVD.
- Residence in, or travel to, an area where EVD transmission is active.
- Direct handling of bats, rodents, or primates from disease-endemic areas.



#### What to do if you have a patient present with suspected EVD

#### For patients identified as potentially ill with EVD:

- Immediately isolate the patient.
- Restrict traffic by other patients and other staff near the room/hallway in which the patient is located.
- Provide the patient with a surgical mask and demonstrate its proper use.
- Minimize the number of staff who interact with the patient and maintain a log of all staff contacts.
- Follow standard, droplet, and contact infection control precautions for all patient interactions.
- Wear appropriate PPE upon entry to the patient's room including gloves, gown, eye protection, and a facemask.



#### What to do if you have a patient present with suspected EVD

#### **Call the Local Health Department for Consultation:**

#### Be Prepared to:

- Describe the patient's risk factors and travel history, including dates and locations of travel and any contact with sick or deceased individuals, healthcare facilities, or animals in areas with ongoing EVD transmission, and
- Describe the patient's presenting symptoms, signs, and duration of illness.

#### Expect to:

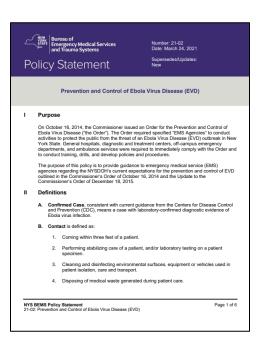
- Discuss the case and possible recommendations for testing
- Receive information on the need to refer the patient to a special pathogen assessment and treatment center (SPTC) for further workup and testing
- Receive assistance to arrange patient transport if deemed needed.

Emergency medical services (EMS) agencies may be called upon to transport a patient at:

- EVD screening sites
- place of residence
- frontline hospitals to SPTC

Bureau of Emergency Medical Services and Trauma Systems

Policy Statement 21-02 provides guidance to emergency
medical services (EMS) agencies regarding the expectation for
the prevention and control of EVD.





All EMS agencies are expected to develop and implement plans, policies, and procedures to ensure the safe and timely transport of patients including, but not limited to:

- Identification, isolation, and medical evaluation of patients.
- Availability of and training with appropriate personal protective equipment (PPE).
- Identification and monitoring of personnel with patient contact.
- Decontamination and medical waste disposal.
- Transportation and treatment of patients.



New York State designated SPTC hospitals are expected to maintain agreements with EMS transport services for the transportation of patients from a frontline hospital to an SPTC designated hospital, or from a SPTC designated hospital to the Region 2 SPTC.

- Frontline hospitals should coordinate patient transportation with the receiving SPTC.
- HHS air transportation services (helicopter and fixed wing) are available by request through FEMA Region 2.



New York State Designated Special Pathogen Treatment Centers (SPTC)

Bellevue Hospital Center New York City Glen Cove Hospital Long Island Mt. Sinai Hospital New York City

University Hospital at Stonybrook Long Island Erie County Medical Center Western New York Strong Memorial Hospital Finger Lakes



# Laboratory Testing

Christina Egan, PhD
Deputy Director, Division of
Infectious Diseases and
Chief, Biodefense and Mycology
Laboratories
Wadsworth Center



### **Sudan Ebolavirus Laboratory Testing**

- NYC PHL, Wadsworth Center, and Bellevue Special Pathogens Center have capability to test for Sudan Ebolavirus.
- Additional regional capacity exists in the Northeast in state PHLs as well as throughout the Laboratory Response Network.



Wadsworth Center Biodefense Laboratory



## Appropriate Specimens for Sudan Ebolavirus Testing

- 2 lavender top whole blood specimens with EDTA anticoagulant (4 mL for adults and 1 mL for pediatric samples).
- Specimen containers should be decontaminated before packaging.
- Use Cat A packaging for transport for Ebola testing.
- If collecting a specimen <72 hrs from symptom presentation, collect an additional specimen >72 hrs for testing for Sudan Ebolavirus.
- Specimens should be sent refrigerated on cold packs to Wadsworth or NYC PHL.





## **Hospital Laboratories**

- Review and update Biohazard Risk Assessment and laboratory protocols.
- Obtain Category A Infectious Substance shippers for transport of specimens to Wadsworth Center or NYC PHL.
- Ensure laboratory staff are trained and certified to package and ship specimens for Sudan Ebolavirus testing.



## **Hospital Laboratories**

- Limited laboratory testing needs to be performed while patient evaluation occurs.
- Experience with PUIs and confirmed EVD patients in the US has demonstrated that laboratory testing can be performed safely in clinical BSL2 laboratories.
- Laboratory instrumentation should be reviewed as part of risk assessment and labs should have developed decontamination protocols based on manufacturer recommendations.



# **EVD Waste Management**

Michael P. Ryan, M.T. (ASCP), Ph.D. Associate Director of Regulatory Affairs Wadsworth Center



#### **EVD Waste Management**

EVD has had a significant impact on the management of regulated medical waste (RMW).

- Special considerations for handling waste generated during patient care.
- Special requirements for packaging of EVD RMW have been established.
- Special permits are required to transport EVD RMW.
- EVD RMW packaging impacts on-site treatment by autoclaving.
- If EBV RMW will be treated on-site, protocols need to be validated and approved by NYSDOH.

Hospitals should review their current waste management plan and ensure that there are protocols in place for the management of EVD RMW in the event they have suspected or confirmed case of EVD.

In general, a waste management plan describes:

- The types of waste being generated.
- Methods for treatment and disposal.
- Procedures for safe handling and transport of the waste within the facility from the point of generation to the point of storage and/or treatment.
- Description of the storage areas.
- The titles and contact information for persons responsible for monitoring compliance.

Some considerations for an EVD waste management plan....



- Provide a description of the types of waste that would be generated during the care of a suspected or confirmed EVD patient.
- Provide a procedure describing how EVD RMW will be packaged.
  - The procedures must be consistent with U.S. Department of Transportation (USDOT) packaging requirements for the transportation of untreated Category A RMW. Each facility should consult with the waste management company that they are working with to confirm that appropriate protocols are being used.
  - The procedures should contain information detailing where each step of the packaging is being performed (e.g., in the patient room, the laboratory, an ante-room, warm, or cold area). It is highly recommended that waste be double bagged in accordance with USDOT requirements in hot areas and transferred to a warm or cold area for packaging into the category A barrel.

- Provide a procedure describing how EVD RMW will be packaged cont.
  - The procedures should include a description of PPE that is used for packaging and disposal of the PPE.
  - If liquid waste will be packaged, include procedures for the packaging of liquid waste and if a solidifier is used, how liquids will be solidified and packaged. If pre-treatment is being used before disposal into the sewer, these protocols need to be included.
  - Sharps waste must be packaged in an FDA-cleared sharps disposal container that is securely closed in accordance with the manufacturer's instructions to prevent leaks and punctures and placed inside the inner bags.



- Provide policies and procedures for the transport of the EVD RMW from the point of generation to the point of storage/disposal. Point of generation may include the following:
  - The patent isolation room; describe flow of waste within the unit
  - The testing laboratories
  - The emergency department
  - Outpatient settings
- Provide a description of the areas where waste will be stored, the length of time
  the waste will be stored, the capacity for the storage area and information
  pertaining to ventilation and environmental control. This would include areas
  such as the patient room, the testing labs, the emergency department, outpatient
  settings and areas for long term storage.

- Provide information on who will transport EVD RMW for treatment off-site including the name and contact information of the company and verification that the waste hauler holds appropriate approvals from NYSDEC and USDOT.
- Provide information on who will transport treated EVD RMW for disposal off-site.
- Provide names and contact information of staff responsible for monitoring compliance of the plan.



#### **Treatment of EVD Waste On-Site**

10 NYCRR Part 70 includes requirements for autoclaves and alternative treatment systems that are used to treat RMW.

If a hospital will be treating EVD RMW on-site using an autoclave or an alternative treatment system, approval needs to be obtained from NYSDOH prior to treating any RMW.

Prior to approval for treatment, facilities must have a written agreement with a disposal facility that is willing to accept the treated EVD waste.



#### **Treatment of EVD Waste On-Site**

A hospital or clinical laboratory using an autoclave to treat EVD RMW must ensure that the autoclave is properly validated for the types of EVD RMW and its packaging (e.g., suction canisters, double bagged or rigid container)

A NYSDOH approved operation plan designed to promote safe and effective operation of the autoclave is required. An operation plan are the policies and procedures that are used for a facility's operation of an on-site autoclave.

Additional information on autoclave operation plans can be found on the Wadsworth Center Regulated Medical Waste Program web site at:

https://www.wadsworth.org/regulatory/rmwp/autoclaves



#### **Treatment of EVD Waste On-Site**

The CDC Ebola web site includes Information on the Survivability of the Ebola Virus in Medical Waste and includes suggested autoclave operating parameters. Please be aware that the CDC-suggested autoclave operating parameters are less stringent than what is required by the NYSDOH.

NYS regulations (Section 70-3.3 of Subpart 70-3 in 10 NYCRR Part 70) describes the generally accepted and alternative operating parameters for autoclaves used to treat RMW in NYS. Details will be provided in NYSDOH Ebola-Associated Waste Management Guidance that will be posted on the NYSDOH Ebola web site.

If a facility operates an autoclave using operating parameters other than those described in Section 70-3.3 of Subpart 70-3 or uses another method to treat RMW, the treatment method must be approved by NYSDOH as an alternative treatment technology. Each facility must be approved by NYSDOH to use an alternative treatment technology before treating any RMW.

Additional information on obtaining approval of an alternative treatment technology can be found on the Wadsworth Center Regulated Medical Waste Program web site at:

https://www.wadsworth.org/regulatory/rmwp/alternative-technologies

### Resources

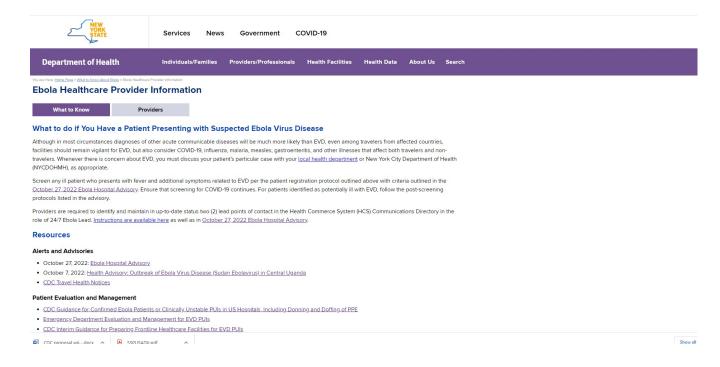


#### **New York State Advisory**

- Health Advisory issued October 27<sup>th</sup>, 2022
   <a href="https://www.health.ny.gov/diseases/communicable/ebola/docs/2022-10-27">https://www.health.ny.gov/diseases/communicable/ebola/docs/2022-10-27</a> ebola hospital advisory.pdf
- This Health Advisory supplants and replaces any Ebola specific guidance previously issued by the Department, including the emergency orders that were issued in response to the 2014 and 2015 outbreaks.



#### Useful Resource





https://www.health.ny.gov/diseases/communicable/ebola/providers/

#### Resources

#### Waste Management

10 NYCRR Part 70: https://regs.health.ny.gov/content/part-70-regulated-medical-waste

USDOT Planning Guidance for Handling Category A Solid Waste: <a href="https://www.phmsa.dot.gov/transporting-infectious-substances/planning-guidance-handling-category-solid-waste">https://www.phmsa.dot.gov/transporting-infectious-substances/planning-guidance-handling-category-solid-waste</a>

USDOT Infectious Substance Special Permits web site: <a href="https://www.phmsa.dot.gov/transporting-infectious-substances/infectious-substance-special-permits">https://www.phmsa.dot.gov/transporting-infectious-substances/infectious-substance-special-permits</a>

Wadsworth Center Regulated Medical Waste Program web site/Autoclaves: <a href="https://www.wadsworth.org/regulatory/rmwp/autoclaves">https://www.wadsworth.org/regulatory/rmwp/autoclaves</a>

Wadsworth Center Regulated Medical Waste Program web site/Alternative Systems: <a href="https://www.wadsworth.org/regulatory/rmwp/alternative-technologies">https://www.wadsworth.org/regulatory/rmwp/alternative-technologies</a>

New York State Department of Environmental Conservation New York State Ebola Waste Disposal Fact Sheet: http://www.dec.ny.gov/chemical/99119.html

Center for Disease Control and Prevention Ebola-Associated Waste Management: <a href="https://www.cdc.gov/vhf/ebola/clinicians/cleaning/waste-management.html">https://www.cdc.gov/vhf/ebola/clinicians/cleaning/waste-management.html</a>

NYSDOH Ebola-Associated Waste Management Guidance: <a href="https://www.health.ny.gov/diseases/communicable/ebola/">https://www.health.ny.gov/diseases/communicable/ebola/</a>

