

35 Cannot Rule Out Ebola

Adopted: 17 March 2019

Effective: 02 April 2019

35.1 Background, Purpose and Expected Results

Ebola Virus Disease (EVD) is highly contagious and highly lethal. It is transmitted by contact with the body fluids of a symptomatic victim. Such fluids as blood, saliva, tears, sweat, urine, feces, CSF, semen, etc are known to transport the virus. The incubation period for Ebola, from exposure to when signs or symptoms appear, ranges from 2 to 21 days (most commonly 8-10 days). Any Ebola patient with signs or symptoms should be considered infectious. **Ebola patients without signs or symptoms are not contagious.**

The prevention of contracting EVD includes actions to avoid:

- Exposure to blood or body fluids of infected patients through contact with skin, mucous membranes of the eyes, nose, or mouth, or
- Injuries with contaminated needles or other sharp objects.

Consistent with the Squad's goals of superior pre-hospital patient care while minimizing risk to care-givers and the public, a suspected EVD patient (aka Person Under Investigation—PUI) must be isolated while receiving care. Also, the caregivers must be protected.

35.2 Circumstances of Applicability

The Squad is dispatched to patient whom Dispatch has screened positive for EVD or a patient presents with, or develops, the signs, symptoms, and history consistent with EVD.

35.3 Requisites

- A patient exhibiting the signs, symptoms, and history consistent with EVD
- Availability of appropriate personal protective equipment (PPE) and supplies
- Availability of appropriate decontamination equipment and supplies
- Training in the donning, decontaminating, and doffing of PPE

35.4 Procedure Description

35.4.1 Required Training

All Squad members that have patient contact (drivers and EMTs) must be trained in donning, decontamination, and doffing of PPE. Training in appropriate modification of initial patient care is also required. The frequency of training will be in accordance with the most recent NYSDOH directive.

35.4.2 History, Signs, and Symptoms

To be suspected of EVD a patient must have a history of any one of

- Lived in or traveled to a country with widespread EVD transmission (that is the Western African countries of Guinea, Liberia, or Sierra Leone) within the last 21 days
- Handled bats or primates from the Western African countries of Guinea, Liberia or Sierra Leone within the last 21 days
- Handled the human remains of a person who was suspected or confirmed to have EVD.
- Come in contact with the blood or body fluids of a person who is suspected or confirmed to have EVD

AND signs and symptoms of:

- Fever of 100.4 degrees Fahrenheit or greater;
OR any one of:
 - Severe headache
 - Muscle pain
 - Vomiting
 - Diarrhea
 - Abdominal pain
 - Unexplained hemorrhage

35.4.3 Protocol

1. Consider separating crew, especially the driver, so that all crew members do not immediately enter the patient area.
2. From no closer than three (3) feet from a patient determine the patient's history with reference to exposure to Ebola virus within the past 21 days. (See history criteria above.). If the patient's history contains a recent Ebola virus exposure criterion, ascertain the patient's complaints. If the complaints include any of:
 - Chills (indicative of fever)
 - Fever (subjective or objective $\geq 100.4^{\circ}\text{F}$)
 - Severe headache
 - Muscle pain
 - Vomiting
 - Diarrhea
 - Abdominal pain
 - Unexplained hemorrhagethen the person has screened positive for suspected EVD.
3. Limit the number of providers with patient contact.
4. Document all persons who have contact with patient or the patient's environment
5. Isolate the patient
6. Reconsider "scene safety". If the crew is not properly equipped, is not properly trained, or perceives uncontrolled danger; withdraw and seek appropriate assistance. Use caution when approaching a patient with EVD; the illness can cause delirium, with erratic behavior that can place EMS personnel at risk of infection, e.g., flailing or staggering
7. Use great care when donning (putting on) PPE. Follow the contact and droplet precautions procedure below.

35 Ebola

8. Notify the receiving hospital before leaving the scene. The preferred hospitals are Robert Packer Hospital and Our Lady of Lourdes Hospital. (See note under Waste, below.)
9. Monitor the patient's condition including body temperature and vital signs.
10. Treat the patient's symptoms, but avoid aerosol-generating procedures.
11. Perform vigorous ambulance disinfection and decontamination. Follow the cleaning and decontamination procedure below.
12. Use extreme care when doffing (taking off) PPE. Follow the PPE decontamination and doffing procedures below
13. **If the patient is not transported (refusal, pronouncement, etc.):**
Contact the Tioga County Dispatch Center and inform them of the positive screening so the County Health Department can be contacted. Be prepared to provide the patient's name and contact information, EMS service name, PCR run number, EMS practitioner's name and contact information.

35.4.4 Contact and Droplet Precautions (Donning PPE) Procedure

The objective of donning PPE in treating a suspected or proven EVD patient is to minimize the risk of any of the patient's body fluid contacting the skin or mucous membranes (including conjunctiva) of the caregiver. Thus, the entire body of the caregiver must be covered.

1. In a safe area, remove and store in an external or sealed compartment which will not be used for the duration of the call all:
 - Jewelry and any objects with sharp edges which might snag or cut the protective coveralls from inside or outside
 - Personal electronics such as pagers, cell phones, watches
 - Other valuable such as, walletOtherwise some or all of these items potentially will be discarded in the decontamination process.
2. Put on first pair of gloves
3. Over your shoes or boots and first pair of gloves, put on biohazard protective coveralls with integral hood and socks. (The first pair of glove's cuffs are inside the sleeves.)
4. Put on boot covers over the coverall's socks.
5. With hood in place on head, put on fit-tested N95 or N99 mask. Straps are on outside of hood
6. Put on surgical mask with face shield. Straps are on outside of hood.
7. With cuffs over the sleeves of the coveralls, put on second pair, and if gloves are flimsy a third pair, of gloves
8. Inspect and be inspected by your companion.

35.4.5 Ambulance and Equipment Cleaning and Decontamination Procedure

While considered “fragile”, EVD virus can survive days to months outside the body. To prevent the spread of EVD by inadvertent contact with from gross puddles to minute droplets of body fluid, careful and vigorous cleaning and decontamination is essential.

1. Wear contact and droplet precaution PPE.
2. Carefully and thoroughly clean all items and surfaces that may have been contaminated either directly or indirectly
3. Use absorbent media to pick up contaminated liquid. Avoid splashing.
4. Wash contaminated areas with bleach solution or other hospital approved disinfecting agent which is effective against Ebola virus. For surfaces that can tolerate stronger bleach solutions: flood the area with a 1:10 dilutions of 5.25% sodium hypochlorite (household bleach) for 10 minutes. Clorox-Clean-Up is a satisfactory cleaning agent. For surfaces that may corrode or discolor: carefully clean to remove visible stains and follow by contact with a 1:100 dilution of 5.25% household bleach for more than 10 minutes. Also acceptable are: 3% acetic acid, 1% glutaraldehyde, and alcohol-based products.
Note: To avoid damage, the skin contact thermometer, which is used in the ambulance, must be cleaned only with a mild soap wipe and alcohol disinfectant.
5. Dispose of solid contaminated waste in biohazard marked (e.g. red bag) containers.
6. Dispose of liquid contaminated waste in the sanitary sewer.

35.4.6 Decontamination and Doffing (Taking off) PPE Procedure

As fire department trained pre-hospital care providers Squad personnel are trained to be hazardous material event aware and in hazardous material event decontamination. To avoid confusion, and thus potentially deadly error, doffing of PPE shall follow NFPA guidance for doffing biohazard PPE. The principles followed are:

- Never move backward through decontamination and doffing, and
 - Use a trained and protected assistant for decontamination and doffing.
1. Establish a designated and safe area for decontamination and containment of contaminated waste.
 2. Establish a path to follow through decontamination and doffing.
 3. Set in place the necessary supplies and hazardous waste containment facilities.
 4. Identify and properly protect (with PPE which may be of a lower level) a person or persons to assist with decontamination and doffing. That person may be one of the care providers who has been verified capable of safely doffing PPE without assistance.

35 Ebola

5. The person who is to doff PPE (the doffer) enters the area at the designated entry point.
6. The doffer is sprayed from a distance by the assistant on all but the face with a decontaminating agent such as Clorox-Clean-Up or 1:10 bleach solution.
7. The doffer moves ahead to a waiting zone and remains in the waiting zone for at least 10 minutes.
8. The doffer moves ahead to the doffing zone.
9. An assistant, without touching the inside of the PPE or the skin of the doffer:
 - a. Removes the surgical mask and eye protection
 - b. Removes the N95 or N99 respirator
 - c. Removes the boot covers by turning inside out.
 - d. Removes the outer gloves by turning inside out
 - e. Removes the coveralls by turning inside out.
 - f. Disposes of the single use items in an appropriate container
10. The doffer safely removes the inner most pair of gloves and disposes of them in an appropriate container.
11. The doffer moves ahead and leaves the decontamination and doffing area.
12. Under the watchful supervision of a coach stationed close-by but at a safe distance (three feet or more), each doffing assistant safely removes PPE.

35.4.7 Suspected or Actual Crew Exposure

If during initial patient contact and assessment and before an EMS provider has donned the appropriate PPE, it becomes apparent that the patient is a suspected case of Ebola, the EMS provider must immediately remove himself or herself from the area and assess whether an exposure occurred.

If an exposure occurred:

1. Without delay, wash and disinfect the exposed area. If the eyes are involved flood with appropriate eye wash. If other mucosa such as the mouth are involved rinse copiously preferably with and appropriate mouth wash with high alcohol content such as Listerine.
2. Implement the Squad's exposure plan.
3. Contact the Tioga County Health Department or CDC.

35.4.8 Waste

Any waste generated from PUI contacts will be left at the hospital where the PUI is taken. Both Our Lady of Lourdes Hospital and Robert Packer Hospital will assist in decontamination and accept waste for disposal.

Note: UHS Wilson Memorial Hospital is planning to refuse PUI patients and refer them to UHS Binghamton General Hospital. Both Wilson and BGH will neither assist in decontamination nor accept waste for disposal.

35.5 Agency Contacts for EVD

Two required agency contacts that are available 24 hours a day, 7 days a week will be the Squad Captain and Squad Co-Captain. In the event that either will be unavailable, the Captain or Co-Captain will appoint a contact in their absence.

35.6 Equipment Supplied on Ambulance

The following is a list of equipment that is kitted specifically for response to an EVD event. These are minimum quantities during periods of time that there is an outbreak of the EVD. OFDES reserves the right at any time to change quantities or items as CDC requirement change and replenished stock becomes available.

Table 1: Kitted EVD PPE and decontamination items

Item	Quantity
Tychem Tyvek QC122S or similar - sized L	2
Tychem Tyvek QC122S or similar - sized XL	2
Tychem Tyvek QC122S or similar - sized 2XL	2
Tychem Tyvek QC122S or similar - sized 3XL	2
Tychem Tyvek QC122S or similar - sized 4XL	2
Slip resistant boot covers	2
3M N95 Masks – Normal Size	4
3m N95 Masks – Small Size	4
Spray bottle of Clorox Clean-up	1
Refill bottle of Clorox Clean-up	1
Safety Glasses or goggles	3
Face shields	3
Alcohol foam spray	1
Listerine or equivalent – small individual bottle	3