

# Suspected Viral Hemorrhagic Fever Ebola

## EMS Dispatch Center

- Use Emerging Infectious Disease (EID) Surveillance Tool with the following chief complaints:  
**Typical Flu-Like Symptoms**  
 and/or  
**Unexpected Bleeding**  
 (not trauma or isolated nose bleed related)
- Use EID Card (or equivalent) with the following protocols (or equivalent)  
 EMD 6 Breathing Problem  
 EMD 10 Chest Pain  
 EMD 18 Headache  
 EMD 21 Hemorrhage (medical)  
 EMD 26 Sick Person
- Ask the following:  
 In the past 21 days have you been to Africa or been exposed to someone who has?  
 If YES:  
 Do you have a fever?

### Evolving Protocol:

Protocol subject to change at any time dependent on changing outbreak locations.

Monitor for protocol updates.

### Viral Hemorrhagic Fevers:

Ebola is one of many.

### DO NOT DISPATCH FIRST RESPONDERS

Dispatch EMS Unit only  
 Discretely notify EMS Supervisor or command staff

NO

## EMS

**Do not rely solely on EMD personnel to identify a potential viral hemorrhagic fever patient – constrained by time and caller information**

**Obtain a travel history / exposure history and assess for clinical signs and symptoms**

### EMS Immediate Concern

- Traveler from area with known VHR (Ebola) with or without symptoms
- Traveler from Sierra Leone, Guinea, or Liberia within past 21 days

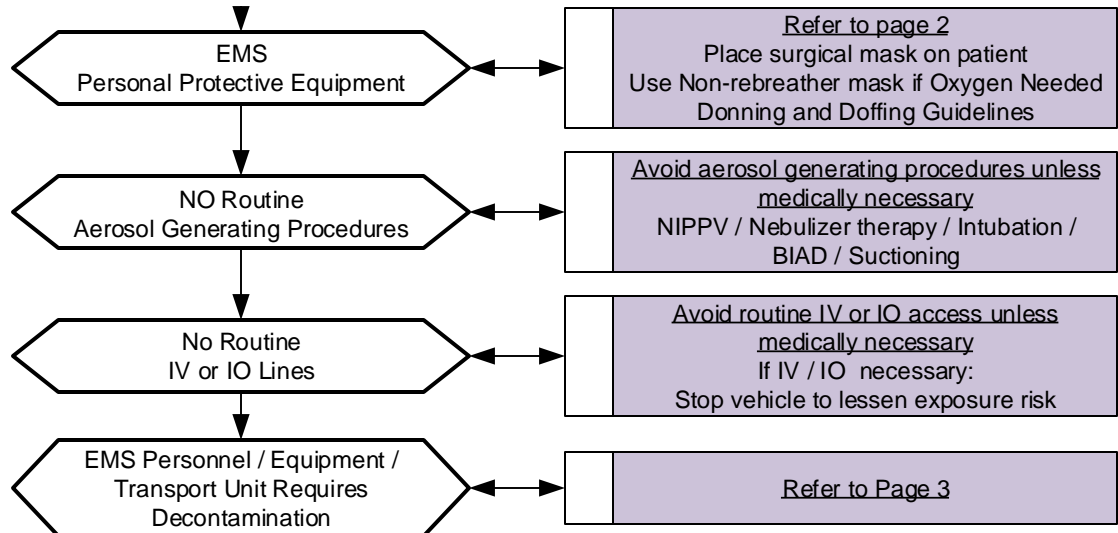
AND

Fever, Headache	Joint and Muscle aches	Weakness, Fatigue
Vomiting and/or Diarrhea	Abdominal Pain	Anorexia
Bleeding		

NO

Exit to Appropriate Protocol(s)

YES



**Notify Destination as soon and as discretely as possible**  
**DO NOT ENTER facility with patient until instructed**  
**Follow entry directions from hospital staff**

Special Circumstances Section

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PARTICULAR ATTENTION MUST BE PAID TO PROTECTING MUCOUS MEMBRANES OF THE EYES, NOSE, and MOUTH FROM SPLASHES OF INFECTIOUS MATERIAL OR SELF INOCULATION FROM SOILED PPE / GLOVES.

THERE SHOULD BE NO EXPOSED SKIN

**DONNING PPE:** **BEFORE** you enter the patient area.

## **Recommended PPE**

**PAPR:** A PAPR with a full face shield, helmet, or headpiece. Any reusable helmet or headpiece must be covered with a single-use (disposable) hood that extends to the shoulders and fully covers the neck and is compatible with the selected PAPR.

**N95 Respirator:** Single-use (disposable) N95 respirator in combination with single-use (disposable) surgical hood extending to shoulders and single-use (disposable) full face shield. If N95 respirators are used instead of PAPRs, careful observation is required to ensure healthcare workers are not inadvertently touching their faces under the face shield during patient care.

**Single-use (disposable) fluid-resistant or impermeable gown** that extends to at least mid-calf or coverall without integrated hood. Coveralls with or without integrated socks are acceptable.

**Single-use (disposable) nitrile examination gloves with extended cuffs.** Two pairs of gloves should be worn. At a minimum, outer gloves should have extended cuffs.

**Single-use (disposable), fluid-resistant or impermeable boot covers** that extend to at least mid-calf or single-use (disposable) shoe covers. Boot and shoe covers should allow for ease of movement and not present a slip hazard to the worker.

**Single-use (disposable) fluid-resistant or impermeable shoe covers** are acceptable only if they will be used in combination with a coverall with integrated socks.

**Single-use (disposable), fluid-resistant or impermeable apron that covers** the torso to the level of the mid-calf should be used if Ebola patients have vomiting or diarrhea. An apron provides additional protection against exposure of the front of the body to body fluids or excrement. If a PAPR will be worn, consider selecting an apron that ties behind the neck to facilitate easier removal during the doffing procedure

## **DOFFING PPE: OUTSIDE OF PPE IS CONTAMINATED! DO NOT TOUCH**

1) PPE must be carefully removed without contaminating one's eyes, mucous membranes, or clothing with potentially infectious materials.

Use great care while doffing your PPE so as not to contaminate yourself (e.g. Do not remove your N-95 facemask or eye protection BEFORE you remove your gown). There should be a dedicated monitor to observe donning and doffing of PPE. It is very easy for personnel to contaminate themselves when doffing. A dedicated monitor should observe doffing to insure it is done correctly. Follow CDC guidance on doffing.

2) PPE must be double bagged and placed into a regulated medical waste container and disposed of in an appropriate location.

3) Appropriate PPE must be worn while decontaminating / disinfecting EMS equipment or unit.

3) Re-useable PPE should be cleaned and disinfected according to the manufacturer's reprocessing instructions.

Hand Hygiene should be performed by washing with soap and water with hand friction for a minimum of 20 seconds.

Alcohol-based hand rubs may be used if soap and water are not available.

EVEN IF AN ALCOHOL-BASED HAND RUB IS USED, WASH HANDS WITH SOAP AND WATER AS SOON AS

FEASIBLE.

## **THE USE OF GLOVES IS NOT A SUBSTITUTE FOR HAND WASHING WITH SOAP & WATER**

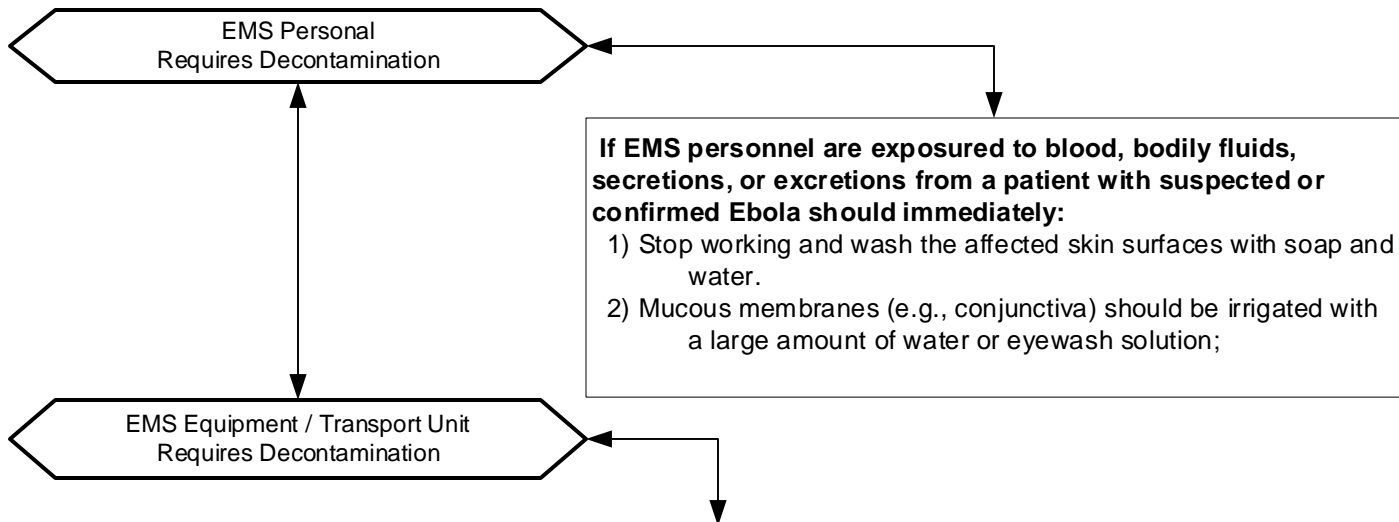
For any provider exposure or contamination contact occupational health.

If the patient is being transported via stretcher then a disposable sheet can be placed over them.

## **Pearls**

- **Transmission to another individual is the greatest after a patient develops fever. Once there is fever, the viral load in the bodily fluids appears to be very high and thus a heightened level of PPE is required.**
- **Patient contact precautions are the most important consideration.**
- **Incubation period 2-21 days**
- **Ebola must be taken seriously; however using your training, protocols, procedures and proper Personal Protective Equipment (PPE), patients can be cared for safely.**
- When an infection does occur in humans, the virus can be spread in several ways to others. The virus is spread through direct contact (through broken skin or mucous membranes) with a sick person's blood or body fluids (urine, saliva, feces, vomit, and semen) objects (such as needles) that have been contaminated with infected body fluids.
- Limit the use of needles and other sharps as much as possible. All needles and sharps should be handled with extreme care and disposed in puncture-proof, sealed containers. Safety devices must be employed immediately after use.
- **Ebola Information: For a complete review of Ebola go to:**  
<http://www.cdc.gov/vhf/ebola/index.html>  
<http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-medical-services-systems-911-public-safety-answering-points-management-patients-known-suspected-united-states.html>

# Suspected Viral Hemorrhagic Fever Ebola



- 1) EMS personnel performing decontamination / disinfection should wear recommended PPE  
**When performing Decontamination EMS Personnel MUST wear appropriate PPE, which includes:**
  - Gloves (Double glove)
  - Fluid resistant (impervious) Tyvek Like Full length (Coveralls)
  - Eye protection (Goggles)
  - N-95 face mask
  - Fluid resistant (impervious)-Head covers
  - Fluid resistant (impervious)-Shoe / Boot covers
- 2) Face protection (N-95 facemask with goggles) should be worn since tasks such as liquid waste disposal can generate splashes.
- 3) Patient-care surfaces (including stretchers, railings, medical equipment control panels, and adjacent flooring, walls and work surfaces) are likely to become contaminated and should be decontaminated and disinfected after transport.
- 4) A blood spill or spill of other body fluid or substance (e.g., feces or vomit) should be managed through removal of bulk spill matter, cleaning the site, and then disinfecting the site. For large spills, a chemical disinfectant with sufficient potency is needed to overcome the tendency of proteins in blood and other body substances to neutralize the disinfectant's active ingredient. An EPA-registered hospital disinfectant with label claims for viruses that share some technical similarities to Ebola (such as, norovirus, rotavirus, adenovirus, poliovirus) and instructions for cleaning and decontaminating surfaces or objects soiled with blood or body fluids should be used according to those instructions.  
(Alternatively, a 1:10 dilution of household bleach (final working concentration of 500 parts per million or 0.5% hypochlorite solution) that is prepared fresh daily (i.e., within 12 hours) can be used to treat the spill before covering with absorbent material and wiping up. After the bulk waste is wiped up, the surface should be disinfected as described in the section above).
- 5) Contaminated reusable patient care equipment should be placed in biohazard bags (double-bagged) and labeled for decontamination and disinfection.
- 6) Reusable equipment should be cleaned and disinfected according to manufacturer's instructions by appropriately trained personnel wearing correct PPE.
- 7) Avoid contamination of reusable porous surfaces that cannot be made single use. Use only a mattress and pillow with plastic or other covering that fluids cannot get through.
- 8) To reduce exposure, all potentially contaminated textiles (cloth products) should be discarded. This includes non-fluid-impermeable pillows or mattresses. They should be considered regulated medical waste and placed in biohazard red bags. They must be double-bagged prior to being placed into regulated medical waste containers.

## Pearls

- **Ebola Information:** For a complete review of Ebola EMS Vehicle Disinfection go to:  
<http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-medical-services-systems-911-public-safety-answering-points-management-patients-known-suspected-united-states.html>

# Suspected Viral Hemorrhagic Fever Ebola

Decedent Known or suspected carrier of HVF / Ebola Requires Transportation

Only personnel trained in handling infected human remains, and wearing full PPE, should touch, or move any Ebola-infected remains.  
Handling human remains should be kept to a minimum.

Donning / Doffing PPE

**PPE should be in place BEFORE contact with the body**

- 1) Prior to contact with body, postmortem care personnel must wear PPE consisting of: surgical scrub suit, surgical cap, impervious Tyvex-Coveralls, eye protection (e.g., face shield, goggles), facemask, shoe covers, and double surgical gloves.
- 2) Additional PPE (leg coverings,) might be required in certain situations (e.g., copious amounts of blood, vomit, feces, or other body fluids that can contaminate the environment).

**PPE should be removed immediately after and discarded as regulated medical waste.**

- 1) Use caution when removing PPE as to avoid contaminating the wearer.
- 2) Hand hygiene (washing your hands thoroughly with soap and water or an alcohol based hand rub) should be performed immediately following the removal of PPE. If hands are visibly soiled, use soap and water.

Preparation of Body Prior to Transport

- 1) At the site of death, the body should be wrapped in a plastic shroud. Wrapping of the body should be done in a way that prevents contamination of the outside of the shroud.
- 2) Change your gown or gloves if they become heavily contaminated with blood or body fluids.
- 3) Leave any intravenous lines or endotracheal tubes that may be present in place.
- 4) Avoid washing or cleaning the body.
- 5) After wrapping, the body should be immediately placed in a leak-proof plastic bag not less than 150  $\mu$ m thick and zippered closed. The bagged body should then be placed in another leak-proof plastic bag not less than 150  $\mu$ m thick and zippered closed before being transported to the morgue.

Surface Decontamination

- 1) Prior to transport to the morgue, perform surface decontamination of the corpse-containing body bags by removing visible soil on outer bag surfaces with EPA-registered disinfectants which can kill a wide range of viruses.
- 2) Follow the product's label instructions. Once the visible soil has been removed, reapply the disinfectant to the entire bag surface and allow to air dry.
- 3) Following the removal of the body, the patient room should be cleaned and disinfected.
- 4) Reusable equipment should be cleaned and disinfected according to standard procedures.

Transportation of VHVF / Ebola Remains

PPE is required for individuals driving or riding in a vehicle carrying human remains. DO NOT handle the remains of a suspected / confirmed case of Ebola. The remains must be safely contained in a body bag where the outer surface of the body bag has been disinfected prior to the transport.

## Pearls

- **Ebola Information:** For a complete review of Handling Remains of Ebola Infected Patients go to: <http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients-us-hospitals-mortuaries.html>

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This protocol has been altered from the original NCEP Protocol by the local EMS Medical Director