NH DIVISION OF Public Health Services
Improving health, preventing disease, reducing costs *for all*
Department of Health and Human Services

Ebola Personal Protective Equipment (PPE) and Environmental Infection Control Frequently Asked Questions

October 29, 2014

1. What type of PPE is recommended while caring for a suspect or confirmed Ebola virus disease (EVD) patient?

Healthcare providers coming into contact with a suspect or confirmed Ebola virus disease (EVD) patient should wear at a minimum the following PPE (preferably disposable) to ensure no skin is showing:

- Fluid resistant or impermeable gown that extends at least to mid-calf
- Two pairs of nitrile gloves with extended cuffs
- Fluid resistant or impermeable boot covers that extend to mid-calf (fluid resistant or impermeable shoe covers can be used instead if used in combination with a suit with integrated socks)
- Surgical hood that covers the head and extends to shoulders
- Full face shield (goggles are no longer recommended)
- NIOSH-certified fit-tested N95 mask

Additional PPE can also include:

- Impermeable suit (coverall) with shoe covers. The suit should NOT include a hood. If a suit with hood is used, the hood should be rolled up and stuffed inside the collar to minimize steps while doffing the PPE
- NIOSH-certified Powered Air Purifying Respirator (PAPR) that consists of a built in full face shield and headpiece. If a reusable helmet or headpiece is used, the PAPR must be covered with an additional disposable surgical hood that extends to the shoulders and is compatible with the selected PAPR.
- A fluid resistant or impermeable apron that covers to the torso to mid-calf

2. What type of gowns or suits should be worn while caring for a suspect Ebola patient?

Different gown and suit manufacturers rate their gowns as fluid-resistant, -impervious, or -impermeable. A suit without an integrated hood is recommended to minimize steps in the doffing of PPE and risk for potential self-contamination. If a suit with a hood is used, the hood should be rolled up and tucked inside the collar.

If the patient is not cooperative and/or if secretions or excretions are not contained, an impermeable suit with shoe covers is preferred over a gown and boot coverings. The healthcare provider must be trained and practiced with donning and especially doffing this higher level PPE because the risk for contamination and healthcare worker infection appears to be highest when removing unfamiliar PPE.

3. Should the suspect Ebola patient wear any PPE such as a mask?

A suspect Ebola patient should be immediately placed in a private room with private bathroom. Transporting the patient throughout the hospital should be avoided, but if absolutely necessary, the patient must wear a surgical mask (not N95) and hallways, elevators, and other areas the patient will pass through should be cleared of other patients, visitors and non-essential healthcare personnel.

4. Where should aerosol-generating procedures on a suspect Ebola patient be performed?

Aerosol-generating procedures should be avoided. If absolutely necessary, the procedure should be performed in an Airborne Infection Isolation Room (AIIR). If an AIIR is not available, the procedure should be performed in a private room with a portable HEPA filtration device. Room doors should be kept closed, and entry and exit should be minimized during and shortly after the procedure. Limit the number of healthcare providers present during the procedure to only those essential for patient care and support.

5. Do healthcare providers who provide care to a suspect Ebola patient have to be quarantined?

No, unless the healthcare provider had direct contact with the patient without appropriate or intact PPE. Any healthcare provider must immediately report any potential breaches in PPE while caring for an Ebola patient. Although healthcare providers in correct PPE without any breaches are at extremely low or negligible risk of EVD, for the public confidence and in an abundance of caution, they should monitor for illness and fever for 21 days after his or her last contact with the Ebola patient. The healthcare facility where these providers work and the NH DPHS will assist in monitoring healthcare workers daily for development signs or symptoms of infection.

6. What should healthcare providers do if there is a potential PPE or infection control breach while caring for a suspect Ebola patient?

Persons with percutaneous or mucocutaneous exposures to blood, body fluids, secretions, or excretions from a patient with suspected or confirmed EVD should stop working and immediately wash the affected skin surfaces with soap and water. Mucous membranes (e.g., conjunctiva) should be irrigated with copious amounts of water or eyewash solution. Immediately contact occupational health and your supervisor for assessment and access to postexposure management services for all appropriate pathogens (e.g., Human Immunodeficiency Virus, Hepatitis C, etc.). An asymptomatic healthcare provider who had exposure should receive medical evaluation and follow-up care including fever and symptom monitoring for 21 days after the exposure. Healthcare facilities should report any potential PPE or infection control breach(es) to the NH DHHS, Division of Public Health Services at (603) 271-4496.

All healthcare providers in contact with the patient shall write their name, title, department, extension, home/cell phone number(s) and email addresses in a log.

7. Is any special treatment of patient waste (e.g., urine, stool, vomit, etc.) required before it goes into the sewer system?

In preparation for a potential Ebola patient, healthcare facilities should contact their local wastewater treatment facility to determine how patient waste from an Ebola patient must be handled. Per CDC guidance, sanitary sewers can potentially be used for the safe disposal of Ebola patient waste even without special treatment of patient waste because the sewage handling processes in the United States

(e.g., anaerobic digestion, composting, and disinfection) are designed to inactivate infectious agents. However, local decisions may deviate and this aspect of EVD patient care should be discussed before patient identification.

8. How should the healthcare facility dispose of medical waste generated from care of an Ebola patient?

Medical waste and materials from an Ebola patient requiring disposal shall be placed in leak-proof containment and discarded appropriately. To minimize contamination of the exterior of the waste bag, place this bag in a rigid waste receptacle designed for this use. Incineration or autoclaving as a waste treatment process is effective in eliminating viral infectivity and provides waste minimization. If disposal requires transport off-site, then these Ebola contaminated wastes must be packaged and transported in accordance with U.S. DOT Hazardous Materials Regulations (HMR, 49 C.F.R., Parts 171-180). This off-site transport and disposal will require a special permit, which can be coordinated with the NH DHHS, Division of Public Health Services (603-271-4496) and your hazardous waste vendor. Ebola-associated medical waste that has been inactivated (e.g., autoclaved) or incinerated may be transported as regulated medical waste and is no longer considered a Category A infectious substance. Once a patient with suspected EVD is ruled out for EVD, their waste materials can be managed routinely. Federal and State officials are actively working on a mechanism for transporting infected materials off-site for any hospital that treats a confirmed Ebola patient.

9. How should non-disposable patient care equipment used on an Ebola patient be handled?

Medical equipment used on Ebola patients should be disposable if possible. If not disposable, medical equipment used on the patient should be dedicated to that patient only. All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected according to manufacturer's instructions and hospital policies. Standard environmental cleaning with U.S. Environmental Protection Agency (EPA)–registered hospital approved disinfectant is effective for non-critical patient care equipment.

10. The disinfectant we usually use to decontaminate surfaces does not specifically list it as effective against Ebola virus. What type of disinfectant should we use?

Use a U.S. Environmental Protection Agency (EPA)–registered hospital disinfectant with a label claim for a non-enveloped virus (e.g., norovirus, rotavirus, adenovirus, poliovirus) to disinfect environmental surfaces in rooms of patients with suspected or confirmed Ebola virus infection. Although there are no products with specific label claims against the Ebola virus, enveloped viruses such as Ebola are susceptible to a broad range of hospital disinfectants used to disinfect hard, non-porous surfaces. As a precaution, selection of a disinfectant product with a higher potency than what is normally required for an enveloped virus is being recommended at this time. EPA-registered hospital disinfectants with label claims against non-enveloped viruses (e.g., norovirus, rotavirus, adenovirus, poliovirus) are broadly antiviral and capable of inactivating both enveloped and non-enveloped viruses.

11. How long does the Ebola virus live on surfaces or in the environment?

One study created conditions to favor virus survival and showed that Ebola virus can remain viable on solid surfaces for up to 6 days. However in a study of more typical patient care environmental conditions, virus was not in any of 33 samples collected from sites that were not visibly bloody.

Based on these data and from studies of other enveloped RNA viruses, consistent daily cleaning and disinfection create conditions in which the Ebola virus survives less than 24 hours.

12.Can a suspect or confirmed Ebola patient have visitors?

Visitors should not be allowed entry into the patient's room. Exceptions may be considered on a case by case basis for those who are essential for the patient's wellbeing (such as the parent of a child). However note that NH DPHS must evaluate and approve any visitors because if they have been in contact with the EVD patient while symptomatic, DPHS will enforce quarantine and they will not be allowed to leave the quarantine location to visit the patient. If visitation is allowed, the healthcare facility should have established procedures for monitoring, managing, and training visitors. Visitor movement within the facility should be restricted to the patient care area and an immediately adjacent waiting area. Visits should be scheduled and controlled to allow for:

- Screening for EVD symptoms before entering the hospital
- Visitor's ability to comply with precautions
- Use of required PPE.

Additional Resources

NH Department of Health and Human Services, Division of Public Health Services
Telephone: 603-271-4496 (after hours 603-271-5300)
http://www.dhhs.nh.gov

CDC Ebola Information for Healthcare Workers and Settings
http://www.cdc.gov/vhf/ebola/hcp/index.html

CDC Healthcare Provider Patient Management Guidance
http://www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html

CDC Ebola Infection Control Recommendations
http://www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.htm

CDC Ebola Personal Protective Equipment Recommendations
http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html

CDC Guidance for Environmental Infection Control
http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html

Selected EPA-Registered Disinfectants
http://www.epa.gov/oppad001/chemregindex.htm