

Personal Protective Equipment (PPE) to Prevent Transmission of Ebola in Hospitals

October 29, 2014

Background

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 tucked 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

The following activities are recommended for healthcare facilities to prepare for the possible use of these PPE recommendations.

Planning

- Review institutional infection control policies to ensure they include EVD.
- Review CDC guidance on PPE selection and the donning and doffing process: <http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>
- Identify personnel who can be available 24/7 and serve as an onsite manager to supervise each step of every PPE donning/doffing procedure to ensure proper completion of established PPE protocols.
- Ensure that all healthcare workers are fit-tested for use of N95 masks or, if unable to wear an N95 mask, are trained on safe use and removal of a PAPR.
- Create dedicated PPE kits for use with a suspect EVD patient. These EVD PPE kits should be located in all patient care areas where a patient with suspected EVD might present (e.g., emergency department, primary care offices, urgent care, etc.). The EVD PPE kits should contain enough PPE to provide safe care for up to 24 hours, and include a range of sizes to accommodate different healthcare provider sizes. The kit should contain, at minimum, the types of PPE listed above.
- Identify a location to isolate a suspected EVD patient. This location should be a private room with private bathroom and two adjacent areas designated for separate donning and doffing.

- Provide refresher PPE trainings now for staff who provide direct patient care, laboratory services and environmental cleaning. This training should ensure proficiency in selection, donning, and doffing of PPE.
 - Facilities should incorporate actual practice of these techniques in the training program.
 - Facilities are encouraged to draw upon in-house resources such as nurse educators, infection prevention, and occupational health. The Division of Public Health Services (DPHS) staff is available to support these efforts and can visit your facility to assist with training and competency verification. DPHS can also provide PPE for practice.
- Develop just-in-time trainings that can be used if a suspect or confirmed EVD patient is admitted.
- Develop a plan to ensure that the healthcare personnel who are designated to providing care to a suspect or confirmed Ebola patient have become proficient in safe donning and doffing.
 - Best practices dictate a “buddy system” which identifies “doffing partners” whereby co-workers observe and assist each other while donning and doffing PPE to make sure all procedures are correctly executed.
 - A healthcare facility should post personnel at the patient’s door to ensure appropriate and safe PPE use by all persons entering the patient room.
- Utilize a log to track all healthcare providers in contact with the patient with their name, title, department, extension, home/cell phone number and email addresses on a log.
- DPHS will assist your facility in the unlikely event of a confirmed EVD patient to instruct healthcare worker contacts to monitor twice a day for fever, headache, joint and muscle aches, weakness, fatigue, diarrhea, vomiting, stomach pain, lack of appetite, or bleeding and report any issues to occupational/employee health.

PPE Availability

In the event that a suspect or confirmed EVD patient presents to a New Hampshire healthcare facility, the facility should rely upon their own supply of PPE to provide care to the patient. If the facility does not have the appropriate PPE types or adequate supplies, the following resources may be made available:

- **NH DHHS EVD PPE Push Packs:** Two packs are available for deployment, a Basic and Advanced. These packs are intended to supply enough PPE for a 24 hour period until the facility can obtain additional PPE from its usual source.
 - The **Basic Pack** will include nitrile gloves, gowns (AAMI Level III), face shields, shoe coverings, surgical hoods, and leg coverings.
 - The **Advanced Pack** will include suits (AAMI Level IV), nitrile gloves, face shields, shoe coverings, surgical hoods, and aprons.
 - These push packs do not routinely include respiratory protection, however DHHS may be able to supply respiratory protection equipment, if needed, depending on facility needs.
 - Requests for a push pack should be directed to the DHHS, Bureau of Infectious Disease Control at 603-271-4496 (after hours 603-271-5300).
- **Public Health Region PPE Cache:** Healthcare facilities can check with the Public Health Region in their area to determine what type of PPE may be available. Public Health Region contact information is available at: <http://nhphn.org/>
- **NH DHHS State Cache:** The State maintains a cache of gloves, gowns, eye protection, facemasks, shoe covers and leg coverings, and N95 masks. Requests for supplies in this cache should be directed to the DHHS, Bureau of Infectious Disease Control at 603-271-4496 (after hours 603-271-5300).

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>