



Centers for Disease Control and Prevention

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Fact Sheet

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Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola

The Centers for Disease Control and Prevention is tightening previous infection control guidance for healthcare workers caring for patients with Ebola, to ensure there is no ambiguity. The guidance focuses on specific personal protective equipment (PPE) health care workers should use and offers detailed step by step instructions for how to put the equipment on and take it off safely.

Recent experience from safely treating patients with Ebola at Emory University Hospital, Nebraska Medical Center and National Institutes of Health Clinical Center are reflected in the guidance.

The enhanced guidance is centered on three principles:

- All healthcare workers undergo rigorous training and are practiced and competent with PPE, including taking it on and off in a systemic manner
- No skin exposure when PPE is worn
- All workers are supervised by a trained monitor who watches each worker taking PPE on and off.

All patients treated at Emory University Hospital, Nebraska Medical Center and the NIH Clinical Center have followed the three principles. None of the workers at these facilities have contracted the illness.

Principle #1: Rigorous and repeated training

Focusing only on PPE gives a false sense of security of safe care and worker safety. Training is a critical aspect of ensuring infection control. Facilities need to ensure all healthcare providers practice numerous times to make sure they understand how to appropriately use the equipment, especially in the step by step donning and doffing of PPE. CDC and partners will ramp up training offerings for healthcare personnel across the country to reiterate all the aspects of safe care recommendations.

Principle #2: No skin exposure when PPE is worn

Given the intensive and invasive care that US hospitals provide for Ebola patients, the tightened guidelines are more directive in recommending no skin exposure when PPE is worn.

CDC is recommending all of the same PPE included in the August 1, 2014 guidance, with the addition of coveralls and single-use, disposable hoods. Goggles are no longer recommended as they may not provide complete skin coverage in comparison to a single use disposable full face shield. Additionally,

goggles are not disposable, may fog after extended use, and healthcare workers may be tempted to manipulate them with contaminated gloved hands. PPE recommended for U.S. healthcare workers caring for patients with Ebola includes:

- Double gloves
- Boot covers that are waterproof and go to at least mid-calf or leg covers
- Single use fluid resistant or impermeable gown that extends to at least mid-calf **or** coverall without intergraded hood.
- Respirators, including either N95 respirators or powered air purifying respirator(PAPR)
- Single-use, full-face shield that is disposable
- Surgical hoods to ensure complete coverage of the head and neck
- Apron that is waterproof and covers the torso to the level of the mid-calf should be used if Ebola patients have vomiting or diarrhea

The guidance describes different options for combining PPE to allow a facility to select PPE for their protocols based on availability, healthcare personnel familiarity, comfort and preference while continuing to provide a standardized, high level of protection for healthcare personnel.

The guidance includes having:

- **Two specific, recommended PPE options** for facilities to choose from. Both options provide equivalent protection if worn, donned and doffed correctly.
- **Designated areas for putting on and taking off PPE.** Facilities should ensure that space and lay-out allows for clear separation between clean and potentially contaminated areas
- **Trained observer to monitor PPE** use and safe removal
- **Step-by-step PPE removal instructions** that include:
 - Disinfecting visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment
- **Disinfection of gloved hands** using either an EPA-registered disinfectant wipe or alcohol-based hand rub between steps of taking off PPE.

Principle #3: Trained monitor

CDC is recommending a trained monitor actively observe and supervise each worker taking PPE on and off. This is to ensure each worker follows the step by step processes, especially to disinfect visibly contaminated PPE. The trained monitor can spot any missteps in real-time and immediately address.

PPE is Only One Aspect of Infection Control

It is critical to focus on other prevention activities to halt the spread of Ebola in healthcare settings, including:

- Prompt screening and triage of potential patients
- Designated site managers to ensure proper implementation of precautions
- Limiting personnel in the isolation room
- Effective environmental cleaning

Think Ebola and Care Carefully

The CDC reminds health care workers to “Think Ebola” and to “Care Carefully.” Health care workers should take a detailed travel and exposure history with patients who exhibit fever, severe headache, muscle pain, weakness, diarrhea, vomiting, stomach pain, unexplained hemorrhage. If the patient is under investigation for Ebola, health care workers should activate the hospital preparedness plan for Ebola, isolate the patient in a separate room with a private bathroom, and to ensure standardized protocols are in place for PPE use and disposal. Health care workers should not have physical contact with the patient without putting on appropriate PPE.

CDC’s Guidance for U.S. Healthcare Settings is Similar to MSF’s (Doctors Without Borders) Guidance

Both CDC’s and MSF’s guidance focuses on:


- **Protecting skin and mucous membranes** from all exposures to blood and body fluids during patient care
- **Meticulous, systematic strategy for putting on and taking off PPE** to avoid contamination and to ensure correct usage of PPE
- **Use of oversight and observers** to ensure processes are followed
- **Disinfection of PPE prior to taking off:** CDC recommends disinfecting visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment. Additionally, CDC recommends disinfection of gloved hands using either an EPA-registered disinfectant wipe or alcohol-based hand rub between steps of taking off PPE. Due to differences in the U.S. healthcare system and West African healthcare settings, MSF’s guidance recommends spraying as a method for PPE disinfection rather than disinfectant wipes.

Five Pillars of Safety

CDC reminds all employers and healthcare workers that PPE is only one aspect of infection control and providing safe care to patients with Ebola. Other aspects include five pillars of safety:

- **Facility leadership has responsibility** to provide resources and support for implementation of effective prevention precautions. Management should maintain a culture of worker safety in which appropriate PPE is available and correctly maintained, and workers are provided with appropriate training.
- **Designated on-site Ebola site manager** responsible for oversight of implementing precautions for healthcare personnel and patient safety in the healthcare facility.
- **Clear, standardized procedures** where facilities choose one of two options and have a back-up plan in case supplies are not available.
- **Trained healthcare personnel:** facilities need to ensure all healthcare providers practice numerous times to make sure they understand how to appropriately use the equipment.
- **Oversight of practices** are critical to ensuring that implementation protocols are done accurately, and any error in putting on or taking off PPE is identified in real-time, corrected and addressed, in case potential exposure occurred.

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