Centers for Disease Control and Prevention

Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Virus Disease in U.S. Hospitals

Standard, contact, and droplet precautions are recommended for management of hospitalized patients with known or suspected Ebola virus disease (EVD) (See Table below). Note that this guidance outlines only those measures that are specific for EVD; additional infection control measures might be warranted if an EVD patient has other conditions or illnesses for which other measures are indicated (e.g., tuberculosis, multi-drug resistant organisms, etc.).

Though these recommendations focus on the hospital setting, the recommendations for personal protective equipment (PPE) and environmental infection control measures are applicable to any healthcare setting. In this guidance healthcare personnel (HCP) refers all persons, paid and unpaid, working in healthcare settings who have the potential for exposure to patients and/or to infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or aerosols generated during certain medical procedures. HCP include, but are not limited to, physicians, nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, students and trainees, contractual personnel, home healthcare personnel, and persons not directly involved in patient care (e.g., clerical, dietary, house-keeping, laundry, security, maintenance, billing, chaplains, and volunteers) but potentially exposed to infectious agents that can be transmitted to and from HCP and patients. This guidance is not intended to apply to persons outside of healthcare settings.

As information becomes available, these recommendations will be re-evaluated and updated as needed. These recommendations are based upon available information (as of July 30, 2014) and the following considerations:

- High rate of morbidity and mortality among infected patients
- Risk of human-to-human transmission
- Lack of FDA-approved vaccine and therapeutics

For full details of standard, contact, and droplet precautions see 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Setting (http://www.cdc.gov/hicpac/2007IP/2007ip_part2.html#e).

For information on symptoms of Ebola Virus Disease infection and modes of transmission, see the CDC Ebola Virus Disease Website.

Key Components of Standard, Contact, and Droplet Precautions Recommended for Prevention of EVD Transmission in U.S. Hospitals

Component	Recommendation	Comments
Patient Placement	• Single patient room (containing a private bathroom) with the door closed • Facilities should maintain a log of all persons entering the patient's room	• Consider posting personnel at the patient's door to ensure appropriate and consistent use of PPE by all persons entering the patient room
Personal Protective Equipment (PPE)	Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing)	
Patient Care Equipment	• Dedicated medical equipment (preferably disposable, when possible) should be used for the provision of patient care • All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected according to manufacturer's instructions and hospital policies	
Patient Care Considerations	• Limit the use of needles and other sharps as much as possible • Phlebotomy, procedures, and laboratory testing should be limited to the minimum necessary for essential diagnostic evaluation and medical care • All needles and sharps should be handled with extreme care and disposed in puncture-proof, sealed containers	
Aerosol Generating Procedures (AGPs)	• Avoid AGPs for patients with EVD. • If performing AGPs, use a combination of measures to reduce exposures from aerosol-generating procedures when	• Although there are limited data available to definitively define a list of AGPs, procedures that are usually included are Bilevel

	performed on Ebola HF patients. • Visitors should not be present during aerosol-generating procedures. • Limiting the number of HCP present during the procedure to only those essential for patient-care and support. • Conduct the procedures in a private room and ideally in an Airborne Infection Isolation Room (AIIR) when feasible. Room doors should be kept closed during the procedure except when entering or leaving the room, and entry and exit should be minimized during and shortly after the procedure. • HCP should wear appropriate PPE during aerosol generating procedures. • Conduct environmental surface cleaning following procedures (see section below on environmental infection control).	Positive Airway Pressure (BiPAP), bronchoscopy, sputum induction, intubation and extubation, and open suctioning of airways. • Because of the potential risk to individuals reprocessing reusable respirators, disposable filtering face piece respirators are preferred.
Hand Hygiene	• HCP should perform hand hygiene frequently, including before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves. • Healthcare facilities should ensure that supplies for performing hand hygiene are available.	• Hand hygiene in healthcare settings can be performed by washing with soap and water or using alcohol-based hand rubs. If hands are visibly soiled, use soap and water, not alcohol-based hand rubs.
Environmental Infection Control	Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus	Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus
Safe Injection practices	• Facilities should follow safe injection practices as specified under Standard Precautions.	• Any injection equipment or parenteral medication container that enters the patient treatment area should be dedicated to that patient and disposed of at the point of use.
Duration of	• Duration of precautions should be	• Factors that should be considered

Infection Control Precautions	determined on a case-by-case basis, in conjunction with local, state, and federal health authorities.	include, but are not limited to: presence of symptoms related to EVD, date symptoms resolved, other conditions that would require specific precautions (e.g., tuberculosis, Clostridium difficile) and available laboratory information

Monitoring and Management of Potentially Exposed Personnel	• Facilities should develop policies for monitoring and management of potentially exposed HCP
	• Facilities should develop sick leave policies for HCP that are non-punitive, flexible and consistent with public health guidance
	  ◦ Ensure that all HCP, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick leave policies.
	• Persons with percutaneous or mucocutaneous exposures to blood, body fluids, secretions, or excretions from a patient with suspected 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/supervisor for assessment and access to postexposure management services for all appropriate pathogens (e.g., Human Immunodeficiency Virus, Hepatitis C, etc.)
	• HCP who develop sudden onset of fever, fatigue, intense weakness or muscle pains, vomiting, diarrhea, or any signs of	

	hemorrhage after an unprotected exposure (i.e. not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids) to a patient with EVD should ◦ Not report to work or should immediately stop working ◦ Notify their supervisor ◦ Seek prompt medical evaluation and testing ◦ Notify local and state health departments ◦ Comply with work exclusion until they are deemed no longer infectious to others • For asymptomatic HCP who had an unprotected exposure (i.e. not wearing recommended PPE at the time of patient contact or through direct contact to blood or body fluids) to a patient with Ebola HF ◦ Should receive medical evaluation and follow-up care including fever monitoring twice daily for 21 days after the last known exposure. ◦ Hospitals should consider policies ensuring twice daily contact with exposed personnel to discuss potential symptoms and document fever checks	
Monitoring, Management, and Training of Visitors	• Avoid entry of visitors 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. • Establish procedures for monitoring managing and training visitors. • Visits should be scheduled and controlled to allow for: ◦ Screening for EVD (e.g., fever and	• Visitors who have been in contact with the EVD patient before and during hospitalization are a possible source of EVD for other patients, visitors, and staff.

	other symptoms) before entering or upon arrival to the hospital ◦ Evaluating risk to the health of the visitor and ability to comply with precautions ◦ providing instruction, before entry into the patient care area on hand hygiene, limiting surfaces touched, and use of PPE according to the current facility policy while in the patient's room ◦ Visitor movement within the facility should be restricted to the patient care area and an immediately adjacent waiting area.	

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