EVD Factsheet 2

Protecting Healthcare Workers from

Ebola Virus Disease (EVD)

Introduction

The current outbreak of Ebola virus disease (EVD) in West Africa requires a concerted response by US healthcare facilities and healthcare workers. With the modern transportation system, an infected individual could appear in the Emergency Room of any US healthcare facility. Some patients do not develop symptoms for up to 21 days, although usually it is 8 to 10 days. Patients are not contagious until they become symptomatic.

HPAE recommends a comprehensive review of all relevant worker and patient infection prevention and control measures in all affected hospitals and facilities.

The total number of reported probable, confirmed and suspected cases in the current outbreak as of September 28, 2014 is 7,178, with 3,338 deaths (47% fatality rate).\(^1\) It is clear that this is an underreporting.

Healthcare workers (HCWs) are at high risk of exposure and as of September 28\(^{th}\), 2014, 377 HCWs have been infected with EVD, 216 of whom have died 57\% (57\% fatality rate). Countries affected are Guinea, Liberia, Nigeria, Senegal and Sierra Leone.

CDC confirmed on September 30, 2014, through laboratory tests, the first case of Ebola to be diagnosed in the United States in a person who had traveled to Dallas, Texas from West Africa. The patient did not have symptoms when leaving West Africa, but developed symptoms approximately five days after arriving in the United States.\(^2\) Subsequently, two nurses who cared for the patient have become infected with Ebola. Reports have indicated that the personal protective equipment and decontamination procedures and related training were deficient.
What is Ebola Virus Disease (EVD)?

A companion Factsheet 1 entitled “Essential Facts about Ebola Virus Disease (EVD)” reviews the basic facts about EVD, caused by exposure to Ebola Filovirus. It is highly infectious, rapidly fatal, with a death rate of up to 90%, but transmission can be prevented. It is spread through direct contact with body fluids (blood, saliva, urine, sperm, etc.) of an infected person and by contact with contaminated surfaces or equipment, including linen soiled by body fluids from an infected person. The Ebola virus can be eliminated relatively easily with heat, alcohol-based products, and sodium hypochlorite (bleach) or calcium hypochlorite (bleaching powder) at appropriate concentrations. **CAUTION:** Misuse of disinfectants has been associated with asthma and other negative health effects among healthcare workers.

A high degree of suspicion is the most important preventive step

Procedures for rapid identification of suspect EVD cases is key to preventing the spread of EVD in the facility. Hospitals should review their procedures to make sure that symptomatic patients are not in waiting rooms, reception areas, emergency departments, or other common areas, potentially exposing patients and staff. Therefore:

- Collect a travel history in all patients presenting with fever. Asking about travel is particularly important in acute care settings to rapidly recognize any potential communicable disease associated with an overseas outbreak.
- Immediately isolate – using standard, contact and droplet precautions - patients who meet the following criteria for suspected cases.

Suspected Cases

A suspected case is determined using the following criteria:

- Fever of greater than 100.4 degrees Fahrenheit;
- and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage;
- and, within the past 3 weeks before the onset of symptoms:
  - contact with blood or other body fluids of a patient known to have or suspected to have EVD;
  - residence in, or travel to, an area where EVD transmission is active;
  - or direct handling of bats, rodents, or primates from disease-endemic areas.

Malaria diagnostics should also be a part of initial testing because it is a common cause of febrile illness in persons with a travel history to the affected countries.
Confirmed Case

A confirmed case is a suspected case with laboratory-confirmed diagnostic evidence of Ebola virus infection.

Comprehensive EVD Infection Prevention & Control Program

As of early October 2014, it is clear that the CDC guidelines are inadequate as they allow for exposed skin and call for minimal decontamination procedures. Therefore, the recommendations below are based on more stringent procedures adopted by US Health & Human Services and Assistant Secretary for Disaster Preparedness for people being deployed to assist with the Ebola epidemic in Africa. Similar procedures have also been adopted by US hospitals in response to the two Dallas nurses becoming infected including Emory in Atlanta and the Nebraska Bio-Containment Center that treated Ebola cases without any secondary infections occurring to healthcare staff.

Note: Procedures for PPE and respirators may vary based upon work tasks and risks. For example, evaluation of a patient with a low grade fever who is not emitting body fluids would be less of a risk than caring for a known patient who is very sick.

Caution: PPE and respirators are the least desirable method of controlling occupational hazards. The reason is that they DO NOTHING to eliminate or reduce the hazard. They only provide a barrier between the worker and the hazard. If PPE is inadequate or fails, YOU WILL BE EXPOSED!

HPAE Position: Ebola cases should be transferred to a single dedicated hospital that is fully prepared, equipped, and trained to handle such cases. Additionally, all New Jersey facilities should work diligently to develop the capacity to implement the measures below. Facilities that are not able to provide the protections listed below, should immediately establish contingency plans for safely transferring suspect or known cases to a collaborating facility that has the necessary program in place.

1) Strengthen and carefully apply standard precautions when providing care to ALL patients regardless of the signs and symptoms they present with.
2) Ensure procedures, signs, and equipment such as tissues, masks, and hand sanitizer are in place in reception areas, triage, and emergency rooms and anywhere patients present to quickly identify and isolate suspect cases.
3) Isolate suspected or confirmed EVD cases in single negative air, isolation rooms. Assure restricted access and dedicated equipment to these areas.
4) Exclusively assign clinical and non-clinical personnel to EVD patient care areas, thereby limiting the number of staff exposed to suspect or known Ebola patients. This is also key for preventing exposure to non-Ebola patients.

5) Prior to entering the patient isolation rooms/areas, ensure that all visitors and health-care workers rigorously use personal protective equipment (PPE) and perform hand hygiene.

6) Putting on and taking off PPE should be performed in an ante room using impermeable plastic sheets to contain body fluids and simplify cleaning and sterilization. A lined trash receptacle and disinfectant should be at hand.

7) Street shoes and clothing should be removed prior to putting on PPE.

8) A buddy or supervisor should help put on and remove PPE to ensure there are no breaches in it and to prevent contamination when removing.

9) PPE should include at least:
   a) Double gloves (nitrile) and outer glove for high risk activities (lots of body fluids)
   b) Full body coverage including an impermeable gown or Tyvek suit sealed to prevent fluid leaking and head and neck covering.
   c) Disposable shoe coverings or rubber boots and disposable apron.
   d) Vented goggles and face shield for eye protection and to protect from splashing.
   e) Respirators, not surgical masks as they don’t protect against aerosolized particles. The minimum should be an N95 disposable respirator. Elastomeric half face or full face respirators are better and Powered Air Purifying respirators are best. PAPRs should be used for any procedures that may generate aerosols.

10) Decontamination procedures should include use of appropriate disinfectants and hand sanitizer. Spraying or wiping disinfectant before and during removal of PPE should be part of these procedures. Avoid contact between soiled gloves and the face and body. A disinfectant foot bath should also be used to disinfect shoes. All environmental surfaces and equipment must be properly disinfected.

11) After removing gloves, wash hands with disinfectant and don another pair of gloves to remove the rest of the PPE.

12) Ensure safety of injections and phlebotomy procedures and management of sharps.

13) Ensure regular and rigorous environmental cleaning, decontamination of surfaces and equipment, management of soiled linen and of waste.

14) Ensure safe processing of laboratory samples from suspected or confirmed patients with EVD.

15) Ensure that the infection prevention and control measures are followed while handling dead bodies or human remains of suspected or confirmed patients with EVD for post mortem examination and burial preparation.

16) Promptly evaluate, care for, and if necessary, isolate health-care workers or any person exposed to blood or body fluids from suspected or confirmed patients with
EVD. See the OSHA Bloodborne pathogens standard for post exposure requirements.\textsuperscript{7} Healthcare workers should also be monitored for fever and be compensated appropriately when they are required to be quarantined at home.

**Respiratory Protection**

Although transmission by the airborne route has not been established, HPAE recommends the use of an N95 or N99 disposable respirator as the minimum protection for routine patient care for patients with suspected or confirmed EVD. The CDC recommends that, if a HCW comes in contact with an EVD patient with severe pulmonary involvement and/or aerosolizing procedures are being conducted, airborne precautions should be followed. In this situation, most experts recommend the use of an elastomeric half or full-face respirator with HEPA filter or a PAPR (powered air purifying respirator) with a HEPA filter. The PAPR does not require fit testing and also provides mouth, eyes, and nose protection. **NOTE:** A surgical mask will not provide protection against airborne transmission.
Training and Education and Preparedness

Training all personnel in identification and control of EVD with a special emphasis on facility specific policies and procedures is urgent. Personnel who regularly conduct triage and who are assigned to handle infectious disease cases should be given a high priority for training. Preparedness requires that facilities develop written policies and procedures, ensure they have an adequate supply of PPE and respirators, and all related programs are up to date.

Attachments

1. CDC PPE Poster – Sequence for putting on and removing PPE (gowns, masks or respirators, goggles or face shield, gloves)
2. NIOSH CDC - How to Properly Put on and Take off a Disposable Respirator

Conclusion

HPAE union representatives should meet with hospital/ facility officials as soon as possible to review EVD preparedness at their locations.

________________________________________________________
1 WHO: Ebola Response Roadmap Situation Report 1 October 2014
3 WHO: Interim Infection Prevention and Control Guidance for Care of Patients with Suspected or Confirmed Filovirus Haemorrhagic Fever in Health-Care Settings, with Focus on Ebola September 2014
4 Characterization of occupational exposures to cleaning products used for common cleaning tasks-a pilot study of hospital cleaners Anila Bello, Margaret M Quinn, Melissa J Perry and Donald K Milton, http://www.ehjournal.net/content/8/1/11
6 2014 ALERT #22 Evaluating Patients for Ebola Virus Disease in New York City

Other References:

- NYCOSH Factsheet: EBOLA VIRUS DISEASE Essential Information for Workers (current as of October 1, 2014)
- NYSNA Practice Alert: EBOLA VIRUS WHAT NURSES NEED TO KNOW