

Ebola Hemorrhagic Fever: Preparedness for Ohio EMS

October 15, 2014



Following the death of an individual who traveled to the United States from western Africa, two nurses in Texas who provided inpatient care to this individual have been confirmed to have contracted Ebola. One of these nurses recently spent several days visiting family members in Summit County before boarding a plane in Cleveland, Ohio that was destined for Dallas, Texas. This nurse is currently receiving treatment in Atlanta, Georgia. The two American healthcare workers who previously contracted Ebola while providing medical care in western Africa were successfully treated and have recovered from the illness.

These recent events have heightened the situational awareness of our entire healthcare community and the need to reinforce the preparedness measures initiated months ago during the surge of the Ebola epidemic in Africa. First and foremost, the signs and symptoms of Ebola hemorrhagic fever and the avenue of transmission of the Ebola virus have not changed.

- Ebola is a viral infection that causes severe illness with a 50-90% mortality rate
- The signs and symptoms of Ebola include:
 - Fever
 - Headache
 - Vomiting
 - Diarrhea
 - Sore throat
 - Joint and muscle aches
 - Weakness
 - Abdominal pain
- The onset of signs and symptoms of Ebola occurs suddenly
- The incubation period of the virus when the person who is infected with Ebola is asymptomatic is 8-10 days, but can range from 2-21 days
- A person infected with Ebola is not contagious until they exhibit signs and symptoms

- Transmission of the Ebola virus occurs through:
 - Direct contact with blood and body fluids of an infected person
 - Exposure to objects that are contaminated by an infected person (e.g. needles)
- The Ebola virus is not transmitted through air, water, or food
- Treatment of Ebola is supportive (IV hydration and electrolyte replacement)
- A vaccine for immunization against Ebola does not currently exist

We are on the brink of entering the influenza season where there is typically an increase in the number of patients presenting with fever, headache, myalgias, and generalized weakness. In addition, we will continue to provide treatment and transport to multiple patients with fever, vomiting, and diarrhea secondary to *Clostridium difficile* and other common etiologies of gastrointestinal symptoms. The identification of risk factors for acquisition of the Ebola virus is critical and is primarily obtained through the history taking process. For the patients presenting with the signs and symptoms of a potential Ebola viral illness, it is imperative that EMS providers inquire about recent travel (3 weeks) or potential contact with the Ebola virus when obtaining the history from the patient. The risk factors include:

- Contact with blood or body fluids of a patient known to have or suspected to have Ebola
- Residence in or travel to a country where an Ebola outbreak is occurring (Nigeria, Liberia, Sierra Leone, New Guinea, Senegal, the Democratic Republic of the Congo)
- Direct handling of bats or nonhuman primates from disease-endemic areas

The appropriate personal protective equipment (PPE), as determined by the guidelines provided by the Centers for Disease Control and Prevention (CDC), should be properly donned prior to the treatment and transport of these patients. According to their current recommendations, standard PPE for blood and body fluid exposure is sufficient for the care of most patients suspected of having Ebola. This level of PPE includes:

- Gloves
- Gown (fluid resistant or impermeable)
- Eye protection (goggles or face shield that fully covers the front and sides of the face)
- Facemask

For scenarios with the potential for a large blood and body fluid exposure, additional PPE (e.g. double gloves, shoe covers, leg covers) is recommended. Higher levels of respiratory PPE (e.g. N-95 masks) are recommended for patients suspected of having Ebola who require airway intervention (intubation, nebulized medications). As such, the performance of these interventions in a relatively elective fashion should be deferred or not performed. Bleach or EPA-registered hospital disinfectants that are effective against viruses are recommended for cleansing patient care equipment, stretchers, and transport vehicles. The individual(s) performing the cleaning should wear PPE during this activity.

There are additional measures that I respectfully request our Ohio EMS agencies to strongly consider as we continue to address the identification and management of patients who have potentially contracted Ebola. These measures are:

- *Engage with the organization responsible for your agency's emergency medical dispatch (EMD)* - EMD is the "gatekeeper" for many resources when contacted by Ohio residents and visitors requesting assistance. The additional inquiry to 9-1-1 callers about recent travel (3 weeks) to countries experiencing an Ebola outbreak or potential exposure to a person infected with Ebola will facilitate the ability of EMS providers to don the appropriate level of PPE prior to arriving on scene.
- *Engage in frequent training and/or provide just-in-time training in the proper donning and doffing of PPE* - We have been informed that the CDC is in the process of developing a just-in-time training tool as a resource to healthcare personnel, but it is not available as of this date.
- *Utilize on-line medical direction paired with early notification during the treatment and transport of a patient who is potentially infected with Ebola* - Regardless of my request as State Medical Director, your local EMS medical director retains the legislative authority to determine how and when you communicate with your receiving facility. However, early notification of the receiving facility via on-line communication will provide our healthcare colleagues in our emergency care facilities a better opportunity to don the appropriate PPE and designate an isolation room prior to the arrival of the patient. This facilitates patient care as well as protection of hospital personnel and the public.
- *Utilize ground transport for the transport and transfer of patients potentially infected with Ebola* - The prehospital and inpatient care for a patient infected with Ebola is supportive. The care provided by EMS personnel in the vast majority of cases will be focused upon stabilization of vital signs and fluid resuscitation. Unlike time-critical diagnoses (STEMI, stroke, and trauma),

an acute intervention or interventional procedure does not exist for Ebola. Congruent with the responsible resource allocation that should be exercised on a daily basis, our air medical services should be reserved primarily for those patients requiring an acute intervention or interventional procedure.

- *The transport destinations of patients potentially infected with Ebola has not been amended* - All hospitals in Ohio are capable of managing the initial treatment of a patient with Ebola and have PPE available for their staff. None of our hospitals have been designated as “Ebola receiving facilities” by the Ohio Department of Health or by the Ohio Hospital Association.

The recent events will place the media focus on Ohio as we continue to prepare and respond. Fear is a natural emotion, but is non-productive during a potential health crisis. We should exercise every opportunity to continually support and educate our communities, as well as ourselves, about the facts regarding the Ebola virus and the constructive measures of prevention and containment. As the public listens to the news reports from the media, we can encourage our citizens to play an active role in the solution by emphasizing the importance of hand washing, avoiding contact with the public during febrile illnesses, and being immunized against influenza.

The same recommendations apply to EMS personnel. The best avenue to protect the patient, the public, and ourselves is to consistently utilize universal precautions. We must always don the appropriate PPE and exercise mandatory hand washing during every patient encounter. As the Ebola scenario evolves in our nation, current and additional future recommendations and a multitude of informational resources can be accessed from the CDC’s website at www.cdc.gov/vhf/ebola.

Thank you for your dedicated service to the citizens and visitors of Ohio and for your diligence in embracing the education and training required to address Ebola. The Ohio Department of Public Safety, Division of EMS will continue to support your efforts and address your needs during this challenge facing our nation.

Stay safe and stay healthy!

Carol A. Cunningham, M.D., FAAEM, FACEP
State Medical Director
Ohio Department of Public Safety, Division of EMS