



October 14, 2014

To: Jefferson County Health Care Providers

From: Tom Locke, MD, MPH, Jefferson County Health Officer

Re: West African Ebola Outbreak – Separating Media Hype from Clinically Relevant Information

Situation Report: The current Ebola Virus Disease (EVD) outbreak began in West Africa in March of 2014. As of October 10, 2014 there have been 8,376 confirmed cases in the three countries where ongoing transmission is occurring – Liberia, Sierra Leone, and Guinea. 4,024 deaths have occurred with a case fatality ratio approaching 50%. Adjusted for underreporting, the true case number could be as high as 21,000.

In his commentary in the NEJM, Peter Piot, MD, PhD of the London School of Hygiene and Tropical Medicine and one of the co-discoverers of the Ebola virus, described the cause of this unprecedented epidemic as arising from a toxic combination of “dysfunctional health systems, international indifference, high population mobility, local customs, densely populated capitals, and a lack of trust in authority”.

A single case of imported Ebola in a Dallas hospital has ignited a media firestorm in the United States, prompting the Centers for Disease Control to issue multiple advisories encouraging a heightened state of preparedness while simultaneously trying to assure the public that the probability of a U.S. outbreak is extremely low. White House press briefings, activation of emergency preparedness response systems, and military deployments to West Africa have also heightened the sense of public alarm. An additional case of Ebola in a healthcare worker who provided direct care to the Dallas patient has called into question the adequacy of current personal protective equipment (PPE) standards and training among health care workers.

The Facts: There is no significant threat of an Ebola outbreak in the United States. Transmission only occurs once an infected individual is symptomatic and as a result of substantial exposure to blood or contaminated body fluids. As the infection worsens, viral titers soar, reaching 10 billion/cc (vs. 50,000-100,000/cc for HIV and 5-20 million/cc for Hepatitis C) at the peak of the illness. Infection occurs when contaminated body fluids come in contact with non-intact skin or mucous membranes. Airborne transmission has not been documented. The very high viral loads, coupled with copious viral shedding in emesis, diarrhea, and from the skin require rigorous adherence to contact precautions, special handling of medical waste and of human remains.

The incubation period for EVD can range from 2 to 21 days with a mean of 8-10 days. The serial interval for transmission, i.e. the time between disease onset in one person and onset in a subsequently infected person averages around 15 days.

Public Health Response: An intensive, albeit belated, international response to the West African outbreak of EVD has now begun. Projections that case numbers could climb as high as 1.4 million by January of 2015 are based on a scenario where no additional control measures are instituted. With the growing international aid response, these assumptions no longer apply. Many formidable obstacles remain, including governmental corruption, lack of health care infrastructure, and widespread public distrust. In addition to primary containment efforts, evaluation of travelers arriving from the endemic area is being intensified. Approximately 150 travelers per day come to the United States from the three affected West African countries. Screenings are taking place at 5 main airports – Newark, JFK, O’Hare, Atlanta, and Washington Dulles – where 94% of travelers from Liberia, Sierra Leone, and Guinea arrive.

Health Care Facility Response: Hospitals, appropriately, are being asked to review infection control practices and take travel histories on febrile patients seen in emergency departments. **Patients with signs and symptoms consistent with EVD (fever, severe headache, muscle pain, weakness, diarrhea, vomiting, abdominal pain, and unusual bleeding) with a history of travel to the West African outbreak zone (or direct exposure to a known or suspected Ebola case) should be immediately isolated and tested for EVD.** Special specimen containers are now available at all local health departments. Testing is available at the Washington State Public Health Lab with turnaround in 6-8 hrs. Harborview Medical Center has agreed to accept referral of American health care workers who have been providing care to EVD victims in the outbreak zone and become accidentally infected. With improving supplies of personal protective equipment in West Africa, this will hopefully be a very rare occurrence.

Health Care Provider Response: A bulletin from the Washington State Medical Association was sent out last week urging providers to review existing infection control and triage protocols. Determining the travel history of febrile patients is also recommended, as a wide variety of illnesses (Measles, MERS [Middle East Respiratory Syndrome], Malaria, Dengue, Chikungunya virus, and others) are associated with international travel. Recent travel to Liberia, Sierra Leone, or Guinea should prompt special evaluation. It is not reasonable to ask every febrile patient whether they have recently travelled to West Africa and may have the unintended effect of increasing patient anxiety. A general inquiry about international travel should be sufficient. Travel history has long been an important element of an infectious disease evaluation and the EVD outbreak underscores its importance.

Review of infection control policies and protocols for donning and removing personal protective equipment (<http://www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf>) is also beneficial although the likelihood of needing these skills to protect yourself from EVD is extremely low. Much more likely is exposure to *C. difficile*, antibiotic-resistant bacterial infections such as MRSA and CRE, Enterovirus D-68, influenza, and a host of other common pathogens. When indicated, personal protective equipment plays a crucial role in worker safety and prevention of nosocomial infection transmission. Due to a documented case of EVD transmission to a health care worker in the Dallas hospital that cared for the much publicized imported Liberian EVD index case, CDC is undertaking a review of current infection control protocols and whether it is feasible for all hospitals to maintain the high level of training needed to safely care for critically ill Ebola patients.

Risk Communication to Patients: Relentless media coverage and political grandstanding in the ramp up to mid-term national elections has created an impression that the United States faces an imminent outbreak of Ebola. Patients should be reassured that there is no significant risk of exposure within the United States. U.S. residents are at risk for outbreaks of many diseases due to low vaccination rates – Measles, Mumps, Pertussis, Influenza, and Varicella in particular. Antibiotic-resistant bacterial infections are on the rise. EVD should be the last thing people think of when they develop any of the non-specific symptoms that are associated with Ebola.

Other Resources: A wealth of information is available on the CDC website <http://www.cdc.gov/vhf/ebola> although the sheer volume is making it difficult to navigate.

The Washington State Department of Health's site <http://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/NotifiableConditions/EbolaResources> has an excellent selection of the most useful resources for health care providers.