



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Office of the Commissioner

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Earl Ray Tomblin
Governor

Karen Bowling
Cabinet Secretary

September 15, 2014

Ebola and Enterovirus

Dear Colleague:

I am reaching out to you today to discuss two diseases that have been covered extensively in the media over the last few weeks. The two diseases are Enterovirus D68 (EV-D68) and Ebola. Both diseases have been the cause of great concern both for clinicians and their patients.

Ebola

The 2014 Ebola outbreak is the largest outbreak in history and the first in West Africa. The current outbreak is affecting four countries in West Africa: Guinea, Liberia, Nigeria, and Sierra Leone but does not pose a significant risk to the United States. A small number of cases in Nigeria have been associated with a man from Liberia who traveled to Lagos and died from Ebola, but the virus does not appear to have been widely spread. Ebola, previously known as Ebola hemorrhagic fever, is a rare and deadly disease caused by infection with one of the Ebola virus strains (Zaire, Sudan, Bundibugyo or Tai Forest virus). The first Ebola virus was discovered in 1976 near the Ebola River in what is now the Democratic Republic of Congo. Since then, outbreaks have appeared sporadically in Africa. Based on evidence and the nature of similar viruses, researchers believe that the Ebola Virus is animal borne and that bats are the most likely reservoir. The current outbreak is the first in West Africa and the first to affect urban areas.

Researchers from the NIH performing genomic surveillance show that the strain responsible for the West African outbreak separated from a closely related strain found in Central Africa (Zaire) as early as 2004, indicating movement from Central to West Africa over the span of a decade. Studying RNA changes occurring over the span of this outbreak suggests that the first human infection of the outbreak was followed by exclusive human to human transmissions. On August 8, 2014, the WHO declared that the current Ebola Outbreak is a Public Health Emergency of International Concern.

A person infected with the Ebola virus is not contagious until symptoms appear. Those symptoms include a fever (greater than 38.6° C or 101.5° F) and additional symptoms such as severe headache, muscle pain, vomiting, diarrhea, abdominal pain or unexplained hemorrhage (bleeding or bruising).

The Ebola virus is spread through direct contact with blood or bodily fluids of a person who is sick with Ebola. Ebola is NOT spread through the air or by water or, in general, in food, though in Africa, Ebola may be spread through the handling or eating of bushmeat (wild game) and contact with wild bats.

Healthcare workers providing care for Ebola patients and the family and friends in close contact with Ebola patients are at the highest risk of getting sick because they may come in contact with the blood or bodily fluids of sick individuals. There is no vaccine for Ebola and treatment is largely supportive. The following basic interventions, when used early, can significantly improve the chances of survival. They include providing IV fluids and balancing electrolytes, maintaining oxygen status and blood pressure and treating other infections if they occur. Recovery from Ebola depends on the patient's immune response. People who recover from Ebola infection develop antibodies that last for at least 10 years, possibly longer.

This outbreak of Ebola has had a huge human cost. As of late August 2014, there have been a total of 2615 suspected and confirmed cases of Ebola and 1427 deaths. The death rate in this outbreak has been averaging around 55-60%. Outbreaks in the past have had death rates as high as 90%. Also, as of August 27, 2014, there have been NO confirmed cases of Ebola in the United States. It was well publicized that two American health care workers who were infected with Ebola in Liberia were transported to a hospital in Atlanta for care. Both patients have been released from the hospital after laboratory testing confirmed that they no longer had the virus in their blood. The CDC advised the hospital that there was no public health concern with their release and these two do not pose a risk to household contacts or to the public. A third American health care worker who also contracted the disease in Liberia is being treated in Omaha, Nebraska. The patient remains hospitalized but has shown improvement. A fourth American health care worker who has tested positive for Ebola has been brought to Atlanta within the last week. There is no additional information on this patient.

The CDC has received many calls from health departments and hospitals about suspected cases of Ebola in travelers from the affected countries. These calls have been triaged and some samples have been sent to the CDC for confirmatory testing. All samples sent to the CDC have been negative so far. To date, all persons under investigation within the United States have tested negative for Ebola. It would be reasonable to expect that other American Health care workers who have been working in the West African Countries experiencing this outbreak may contract Ebola and be

brought back to the United States for treatment. The hospitals and healthcare workers here in the United States are working cooperatively with each other to share information. The Nebraska Medical Center's biocontainment unit is the largest of its kind in the United States and one of only four (another being at Emory in Atlanta) in the country specially equipped to safely care for people with dangerous and contagious diseases.

The CDC is encouraging all healthcare providers to ask patients about their travel history to determine if they have travelled to affected areas within the last three weeks, to be familiar with the symptoms of Ebola and to know to properly isolate and follow infection control practices in any patient suspected of having Ebola to help prevent its spread. A number of websites that can be accessed with additional information about Ebola will be attached to this letter.

Enterovirus D69 (EV-D68)

From mid-August through September 11, 2014, a total of 97 people in six states have been confirmed to have a respiratory illness caused by EV-D68. A CDC lab has confirmed these cases. Thus far no deaths have been attributed to EV-D68.

Enteroviruses are very common viruses and there are more than 100 different types. The CDC estimates that approximately 10 to 15 million enterovirus infections occur in the United States each year. Enteroviruses can cause respiratory illness, febrile rash and rarely, neurologic illnesses such as aseptic meningitis and encephalitis. Most infected people have no symptoms or only mild symptoms. Infants, children and teenagers are the most likely to become ill from their enterovirus infection. Adults can also get infected with enterovirus but are less likely to become ill from the infection or only have mild symptoms. In the United States, people are more likely to get infected with Enteroviruses in the summer and fall. Therefore, we are currently in enterovirus season.

Enterovirus D68 infections are thought to occur less often than infections with other types of enteroviruses. The EV-D68 was first identified in 1962 in California. Compared with other enteroviruses, EV-D68 has been rarely reported within the United States. However, all enteroviruses, including EV-D68 is likely to be found in many places throughout the United States during this time of year.

Oddly, this year in August, two Missouri and Illinois hospitals had higher numbers of children with severe respiratory illness caused by EV-D68 than usual for this time of year. Many of these children had asthma. Most had difficulty breathing; some had wheezing. EV-D68 has been reported to cause mild to severe respiratory illness. The mild symptoms may include fever, runny nose, sneezing, cough, body and muscle aches. Severe symptoms relate to difficulty breathing as was seen by the children from

Missouri and Illinois. Health care providers should consider EV-D68 as a possible cause of acute, unexplained severe respiratory illness, even in the absence of fever.

EV-D68 is not frequently identified, thus it is less studied than other viruses and the ways it spreads are not well-understood. EV-D68 does cause respiratory illnesses, thus the virus can be found in respiratory secretions, such as saliva, nasal mucus, or sputum. The virus likely spreads from person to person when an infected person coughs, sneezes or touches contaminated surfaces.

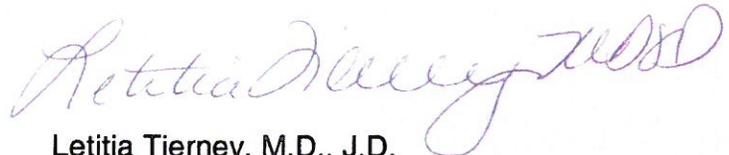
There are no specific treatments for people with respiratory illness caused by EV-D68. For mild symptoms, over the counter medications may be useful. For others with a more severe respiratory illness caused by EV-D68 may need to be hospitalized and receive intensive support therapy. There are no anti-viral medications currently available for people who become infected with EV-D68 nor are there any vaccines to prevent infections of EV-D68.

Since people with Asthma are at greater risk for respiratory illnesses, they should regularly take medicines and follow guidance to maintain control of their illness during this time. I would also ask you to encourage them to get their influenza vaccination.

US Healthcare professionals are not required to report known or suspected cases of enteroviruses, included EV-D68 to health departments because it is not a reportable disease. However, healthcare professionals should be aware of EV-D68 as a potential cause of clusters of severe respiratory illness, particularly in young children. Please consider laboratory testing or respiratory specimens for enterovirus when the cause of infection in severely ill patients is unclear. The State Health Lab can be of assistance to hospital/patient labs for typing. Please report suspected cases and clusters of severe respiratory illnesses to your local health department for further guidance.

A number of websites that can be accessed with additional information about EV-D-68 will be attached to this letter.

Sincerely,

A handwritten signature in blue ink, appearing to read "Letitia Tierney", with a stylized flourish at the end.

Letitia Tierney, M.D., J.D.
Commissioner and WV State Health Officer

LT/jr

EBOLA

- The case definitions for Ebola virus disease are available at www.cdc.gov/vhf/ebola/hcp/case-definition.html
- Information about the PHEIC declaration is available on the WHO website www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/#
- CDC information <http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html>
- "Infection Control for Viral Hemorrhagic Fevers in the African Health Care Setting" (www.cdc.gov/vhf/abroad/vhf-manual.html).
- "Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Hemorrhagic Fever in U.S. Hospitals" (www.cdc.gov/vhf/ebola/hcp/infection-prevention-and-control-recommendations.html).
- A CDC Health Alert Network (HAN) notice providing guidance to U.S. healthcare workers and hospitals regarding Ebola virus disease was distributed by CDC on August 1 (<http://emergency.cdc.gov/han/han00363.asp>).
- For detailed information on environmental infection control, see CDC's "Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus" (www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html).
- Visit CDC's Travelers' Health website (wwwnc.cdc.gov/travel) for more information about the outbreak and for other health recommendations to the specific countries
- CDC's Interim Guidance about Ebola Virus Infection for Airline Flight Crews, Cleaning Personnel, and Cargo Personnel is posted on CDC's website at www.cdc.gov/quarantine/air/managing-sick-travelers/ebola-guidance-airlines.html.
- CDC Ebola Hemorrhagic Fever site: www.cdc.gov/ebola
- CDC Travelers' Health site: <http://wwwnc.cdc.gov/travel/notices>
- World Health Organization (WHO) Ebola virus disease (EVD) site: www.who.int/csr/disease/ebola/en/

EV-D68

- CDC. Clusters of acute respiratory illness associated with human enterovirus 68 — Asia, Europe, and United States, 2008–2010. MMWR. 2011. 60; 1301-1304. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6038a1.htm>
- CDC. Severe respiratory illness associated with enterovirus D68 – Missouri and Illinois, 2014. MMWR, 2014, 63; early release. Available at <http://www.cdc.gov/mmwr/pdf/wk/mm63e0908.pdf>
- CDC website (www.cdc.gov/non-polio-enterovirus).
- CDC enterovirus D68 website: <http://www.cdc.gov/non-polio-enterovirus/about/EV-D68.html>