



COLORADO INFORMATION ANALYSIS CENTER

AWARENESS BULLETIN

(U) Ebola Awareness for First Responders

(U) Scope

(U) This document is intended to provide first responders with a summary of current information about the Ebola virus as well as provide awareness on safety guidelines for first responders. First responders are defined as law enforcement, fire service, and emergency medical service professionals.

(U) Background

(U) The 2014 Ebola outbreak in West Africa is the largest in history. The first case associated with the outbreak was reported in March 2014; it is believed to have started in Guinea and then spread to Sierra Leone, Liberia, Nigeria, and Senegal.¹ As of 30 September 2014 the number of patients with Ebola in Guinea, Liberia and Sierra Leone surpassed 6500 with more than 3000 deaths.² On 08 August 2014, the World Health Organization (WHO) Director-General declared the West Africa outbreak a 'Public Health Emergency of International Concern.'

(U) On 30 September 2014, the Centers for Disease Control and Prevention (CDC) confirmed the first case of Ebola in the United States in an individual who traveled from West Africa. This individual is currently hospitalized in Dallas, Texas.³ The patient did not have symptoms when leaving West Africa, but developed symptoms approximately five days after arriving in the United States.⁴



(U) Image is from the National Biosurveillance Center report: Ebolavirus in West Africa. September 04, 2014.

(U) About Ebola

(U) Ebola is a viral illness. It is a form of viral hemorrhagic fever that is caused by a group of viruses known as *Ebolaviruses* (four of the five viruses identified to date can cause illness in humans).^{5,6} Viral hemorrhagic fever illnesses typically impact more than one organ system within the human body and often has an abrupt onset.⁷ Ebola virus disease in humans was first discovered in 1976 near the Ebola River (Yambuku) in the Democratic Republic of Congo.⁸ While its origin is still unknown, it is believed to originally be animal-borne, most likely bats.⁹

(U) Symptoms of Ebola

(U) Ebola illness may appear 2 to 21 days after exposure to an individual ill with the disease although the average incubation is 8 to 10 days.¹⁰ According to the WHO, the first symptoms of illness are: sudden onset of fever, fatigue, muscle pain, headache, and sore throat. This is followed by: vomiting, diarrhea, rash, impaired kidney and liver function, and (in some cases) both internal and external bleeding.¹¹

(U) Transmission of Ebola

(U) A person infected with the Ebola virus is not able to spread the illness to others until they develop symptoms.¹²

(U) It is spread from person-to-person through direct contact (via broken skin or mucous membranes – eyes, nose, and mouth) with blood or body secretions/body fluids from an infected individual (e.g. urine, saliva, feces, vomit, sweat, and semen).¹³ All body fluids are considered a risk. Exposure may also occur from coming in contact with surfaces or materials contaminated with blood or body fluids of an infected person such as contaminated medical supplies, bedding, or clothing.¹⁴

Ebola Symptoms

Sudden onset of:

- Fever
- Fatigue
- Muscle Pain
- Headache
- Sore Throat

As the illness progresses:

- Vomiting
- Diarrhea
- Rash
- Impaired kidney and liver function
- *In some cases, both internal and external bleeding (hemorrhaging)*

(U) Ebola Updates for Colorado

(U) The determination of an elevated risk of Ebola in a Colorado community is made by the city or county health department(s), the Colorado Department of Public Health and Environment, and the CDC.

(U) First Responder agencies are encouraged to maintain a good relationship with both the local public health representative and the Colorado Department of Public Health and Environment in order to stay informed about events related to Ebola and to obtain the latest public health recommendations for Colorado. Updates are distributed through the state's Health Alert Network (HAN), which first responder agencies can obtain by registering for through their local or state public health agency.



(U) Ebola virus image from the Centers for Disease Control and Prevention website.

(U) Report Suspect Cases of Ebola Immediately

(U) First responders should ask about travel to West Africa when assessing individuals for possible Ebola illness. If Ebola is suspected, based on travel history and symptoms, call the Colorado Department of Public Health and Environment **immediately at 303-692-2700 or after hours: 303-370-9395** (evenings and weekends).

(U) First Responder Protection from Ebola

(U) To assist the first responder community in establishing protocols to protect their personnel, the CDC recently released the '**Interim Guidance for Emergency Medical Services (EMS) Systems and 9-1-1 Public Safety Answering Points (PSAPs) for Management of Patients with Known or Suspected Ebola Virus Disease in the United States.**'¹⁵ These guidelines are intended to assist law enforcement, fire service agencies, emergency medical service providers, and 911 communications centers in addressing general questions and responding to a scene with individuals suspected of having Ebola. The recommendations as of 01 October 2014 are:



(U) Image of personal protective eye wear and mask. (CDC)

- (U) When Dispatch has advised the responding agency that an individual is suspected of having Ebola, responders should: (1) put on the appropriate personal protective equipment (PPE) before entering the scene, (2) keep the patient separated from others, and (3) use caution when approaching the individual as the illness can cause delirium, with erratic behavior (e.g., flailing or staggering) that can place responding personnel at risk of infection.
- (U) The appropriate PPE for suspect cases of Ebola is: Standard, Contact, and Droplet Precautions: e.g., wearing gloves, gown (fluid resistant or impermeable), eye protection (goggles or face shield that fully covers the front and sides of the face), and a facemask. Additional PPE may be required in situations where large amounts of blood or body fluids are present in the environment. This may include double gloving, disposable shoe covers and leg coverings, and advanced respiratory protection (N95 respirator).
- (U) Avoid aerosol-generating procedures. If this type of procedure is necessary the responder's PPE should include an N95 or higher respiratory protection method and the procedure should be performed in an airborne infection isolation area/room with few people nearby.^{16, 17}
- (U) If the blood, body fluids, secretions, or excretions from a person suspected of having Ebola come in direct contact with a first responder's skin or mucous membranes, the responder should immediately stop working, wash the affected skin surfaces with soap and water and report the exposure to a supervisor.

(U) First responder agencies should discuss with their state or local public health representative the reporting process for an occupational exposure prior to an event so proper monitoring can occur.

(U) Environmental Cleaning and Disinfection

(U) Following proper environmental cleaning and disinfecting procedures of surfaces, vehicles, and equipment reduces the risk of additional exposures to Ebola. The CDC '**Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus**' provides detailed information to assist responders in developing their own agency's procedures for such situations. It includes decontamination of the vehicle and equipment, hand hygiene, cough and respiratory hygiene, and proper use FDA approved medical PPE.

(U) These guidelines state that those who perform the environmental cleaning and disinfection should wear recommended PPE (described above) and consider wearing shoe and leg coverings. Face protection (facemask with goggles or face shield) is recommended when performing tasks such as liquid waste disposal that can generate splashes. The use of an EPA-registered hospital disinfectant that is intended for non-enveloped viruses such as norovirus, rotavirus, adenovirus, and poliovirus is ideal for disinfecting surfaces.¹⁸

(U) Not all items that an individual ill with Ebola comes in contact with are disposable. For such items, CDC recommends that contaminated reusable patient care equipment be placed in biohazard bags and labeled for cleaning and disinfection according to agency policies. Reusable equipment should be cleaned and disinfected according to manufacturer's instructions by trained personnel wearing correct PPE.¹⁹

(U) Removal of Biohazard Waste

(U) It is important to note that the environmental contamination of blood and body fluids is biohazard waste. In addition to this, the Ebola virus is a Category A infectious substance regulated by the U.S. Department of Transportation's (DOT) Hazardous Materials Regulations (HMR, 49 C.F.R., Parts 171-180).



(U) Biohazard symbol .

(U) Any item transported for disposal that is contaminated or suspected of being contaminated with a Category A infectious substance must be packaged and transported in accordance with the HMR.

(U) This type of waste includes medical equipment, sharps, linens, and used health care products such as soiled absorbent pads or dressings, kidney-shaped emesis pans, portable toilets, used Personal Protection Equipment (e.g., gowns, masks, gloves, goggles, face shields, respirators, booties), and the byproducts of the cleaning process

(U) At this time, CDC is still assessing the final disposal process for Ebola biohazard waste. Monitor the CDC website for updates.

(U) This CIAC Awareness Bulletin was created with the technical support of the Colorado Department of Public Health and Environment, Colorado State Patrol, and Cunningham Fire Protection District.



(U) Image of disinfecting medical surfaces. (CDC)

- ¹ World Health Organization, Media Centre. 'Ebola Virus Disease- Fact Sheet.' (Updated September 2014); 01 October 2014. <http://www.who.int/mediacentre/factsheets/fs103/en/>
- ² World Health Organization, Global Alert and Response. 'UN Mission for Ebola Emergency Response in Accra.' 01 October 2014. <http://www.who.int/csr/disease/ebola/en/>
- ³ Centers for Disease Control and Prevention. 'First Imported Case of Ebola Diagnosed in the United States' 01 October 2014. <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/united-states-imported-case.html>
- ⁴ *ibid*
- ⁵ Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases; Division of High-Consequence Pathogens and Pathology. 'Fact Sheet: Ebola Hemorrhagic Fever.' 27 July 2014. <http://www.cdc.gov/vhf/ebols/resources/pdfs/ebola-factsheet.pdf>
- ⁶ Centers for Disease Control and Prevention. 'About Ebola Virus Disease.' 01 October 2014. <http://www.cdc.gov/vhf/ebola/about.html>
- ⁷ Centers for Disease Control and Prevention, Special Pathogens Branch: 'Viral Hemorrhagic Fevers.' 01 October 2014. <http://www.cdc.gov/ncidod/dvrd/spb/mnpages/dispages/vhf.htm>
- ⁸ World Health Organization, Media Centre. 'Ebola Virus Disease- Fact Sheet.' (Updated September 2014); 01 October 2014. <http://www.who.int/mediacentre/factsheets/fs103/en/>
- ⁹ Centers for Disease Control and Prevention. 'About Ebola Virus Disease.' 01 October 2014. <http://www.cdc.gov/vhf/ebola/about.html>
- ¹⁰ Centers for Disease Control and Prevention, Ebola Virus Disease – Signs and Symptoms. 01 October 2014. <http://www.cdc.gov/vhf/ebola/symptoms/index.html>
- ¹¹ World Health Organization. "Ebola Virus Disease Fact Sheet N103' (Updated September 2014). 01 October 2014. <http://www.who.int/mediacentre/factsheets/fs103/en/>
- ¹² *ibid*
- ¹³ Centers for Disease Control and Prevention, Ebola Virus Disease – Signs and Symptoms. 01 October 2014. <http://www.cdc.gov/vhf/ebola/symptoms/index.html>
- ¹⁴ World Health Organization. "Ebola Virus Disease Fact Sheet N103' (Updated September 2014). 01 October 2014. <http://www.who.int/mediacentre/factsheets/fs103/en/>
- ¹⁵ Centers for Disease Control and Prevention, 'Interim Guidance for Emergency Medical Services (EMS) Systems and 9-1-1 Public Safety Answering Points (PSAPs) for Management of Patients with Known or Suspected Ebola Virus Disease in the United States.' 01 October 2014. <http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-emergency-medical-services-systems-911-public-safety-answering-points-management-patients-known-suspected-united-states.html>
- ¹⁶ Centers for Disease Control and Environment. Safe Management of Patients with Ebola Virus Disease (EVD) in U.S. Hospitals. 02 October 2014. <http://www.cdc.gov/vhf/ebola/hcp/patient-management-us-hospitals.html>
- ¹⁷ Center for Disease Control and Prevention. Checklist for Patients Being Evaluated for Ebola Virus Disease (EVD) in the United States. 02 October 2014. <http://www.cdc.gov/vhf/ebola/pdf/checklist-patients-evaluated-us-evd.pdf>
- ¹⁸ Centers for Disease Control and Prevention, 'Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus.' 01 October 2014. <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>
- ¹⁹ Centers for Disease Control and Prevention, 'Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus.' 01 October 2014. <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>

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