

Ebola



GUIDANCE FOR FIRE DEPARTMENTS RESPONDING TO POTENTIAL INCIDENTS INVOLVING EBOLA

(Rev. 12/2/14)

The Office of Fire Prevention and Control has developed this guidance to assist fire department operations during a potential response involving Ebola.

What is Ebola: Ebola is a rare, infectious and often fatal disease found primarily in West Africa and caused by infection with one of the five Ebola virus strains. This disease is not endemic to the United States and all cases in the US involve those that have traveled to West Africa or have come in contact with someone who recently had. Ebola can cause disease in humans and nonhuman primates such as monkeys, gorillas, and chimpanzees and has mortality rates that range from around 38% to over 90% depending on the strain.

How does it spread: Ebola is spread through direct contact (via broken skin or mucous membranes) with the following:

- Blood or body fluids (including but not limited to urine, saliva, sweat, feces, vomit, breast milk, and semen) of a person who is sick with or died from Ebola;
- Objects (like needles and medical equipment) that have been contaminated with the virus; or
- Infected animals.

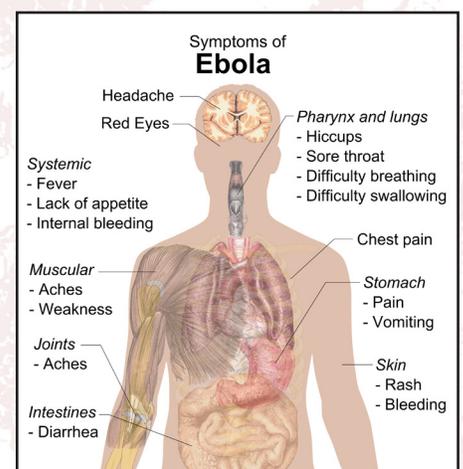
Ebola is not spread through the air or by water, or in general, by food. However, in Africa, Ebola may be spread as a result of handling bushmeat (wild animals hunted for food).

Fire Department personnel assisting ambulance operations or providing direct care for Ebola patients are at high risk of getting sick because they are in close contact with the infected blood or body fluids of sick patients, therefore appropriate care must be taken to ensure their safety.

What are the signs and symptoms: Symptoms of Ebola include fever, severe headache, muscle pain, weakness, diarrhea, vomiting, abdominal (stomach) pain, rash, and unexplained hemorrhaging (bleeding or bruising). Symptoms may appear anywhere from 2 to 21 days after exposure to Ebola, but the average is 8 to 10.

A person isn't contagious with Ebola until he or she has symptoms of the disease.

How is it treated: Treatment of Ebola is primarily supportive in nature and symptoms are treated as they appear. Experimental vaccines and treatments for Ebola are under development, but they have not yet been fully tested for safety or effectiveness.



Recommended Pre-Incident Preparedness and Planning Recommendations:

- Implement Dispatch Center triage protocols to assist with early identification of a potential Ebola patient and notification of responders.
 - When the patient's symptoms reported by the caller include one or more of those identified for Ebola, follow up questions should include the following:
 - Does the patient have a fever, headache, weakness, abdominal pain or distress?
 - Has the patient returned from traveling to West Africa within the past 21 days?
- See CDC Guidance for Additional Information: <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?mobile=nocontent>
- Develop a list of agencies to be notified and/or who provide assistance (local health departments, etc.) and including 24/7 contact info for each. The following are just a few additional agencies you may wish to consider.

CDC	800-232-4636
NYS DOH & BEMS	518-402-0996
NYS OEM WATCH CENTER	518-292-2200
NYS OFPC	518-474-6746

- Develop a plan identifying which agencies or units will be designated to transport a potential Ebola patient and the designated receiving hospital
- Establish PPE levels and procedures consistent with current guidelines established by the CDC: <http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html>
- Ensure personnel are provided with, and trained in donning and doffing, properly fitted PPE.
- Update fit testing for the respiratory protection provided to responders (N95 or higher). For additional information see: http://www.cdc.gov/niosh/nppt/topics/respirators/disp_part/RespSource3fittest.html
- Conduct bloodborne pathogen refresher training including updated and current information specific to Ebola.
- Fire Departments that run Certified EMS unit should review the specifications required under the Commissioner of Health's orders and understand how they apply to their agencies. For Additional information see: http://www.health.ny.gov/diseases/communicable/ebola/#commissioner_order
- Hold a drill or exercise to determine if your plan works.
- Identify equipment and additional/remedial training needs, based on exercise results.

Recommended Incident Response Recommendations:

- Limit the number of personnel who come into contact with the patient to the lowest number necessary to safely treat and transport the patient. In most cases, this will be 1-2 EMS providers in the patient care compartment and 1 driver. DO NOT enter a potentially contaminated environment unless you are equipped with and wear PPE.
- Use trained observers to monitor for correct PPE use and adherence to protocols for donning and doffing PPE, and guide personnel at each point of use using a checklist for every donning and doffing procedure.
- Limit the equipment taken into the contaminated environment to that which is necessary for patient treatment and do not contaminate it unless required to treat your patient (ex. setting your jump bag down onto a floor contaminated with bodily fluids, vomit, or blood).
- Identify equipment likely to require decontamination or disposal which is critical to remaining operational and identify a replacement plan or, if feasible, obtain replacement equipment.
- Use caution when approaching a patient with Ebola as the illness can cause delirium with erratic behavior that can place EMS personnel at risk of infection (e.g., flailing or staggering).
- Limit procedures to only those that are absolutely necessary prior to arrival at the hospital.
- Identify transportation routes for any potential patient, including the appropriate receiving facility. Ensure secondary routes are identified if the primary routes are not passable.

- While all hospitals are expected to be able to receive and initially treat potential or confirmed Ebola patients, 10 hospitals have been declared as Ebola resource centers and will be used to provide definitive care of patients from other hospitals as well as their own walk-ins. The designated Ebola resource centers are:
 - New York-Presbyterian Hospital in Manhattan
 - Mount Sinai Hospital in Manhattan
 - Bellevue Hospital Center in Manhattan
 - North Shore/Long Island Jewish Health System in Nassau County
 - Montefiore Medical Center in the Bronx
 - Stony Brook University Hospital on Long Island
 - SUNY Upstate University Hospital in Syracuse
 - University of Rochester Medical Center in Rochester
 - Erie County Medical Center in Buffalo
 - Women & Children's Hospital of Buffalo

Note: The number of hospitals designated as Ebola resource centers is likely to change as more hospitals become better equipped to handle these patients.

- Notify the receiving healthcare facility as soon as possible when transporting a patient with suspected Ebola, so that proper infection control precautions can be taken by the hospital staff.
- Follow the requests and orders from the receiving facility as to where you should enter and when they are ready for you to bring the patient into the facility. Movement of suspected Ebola patients into hospital or healthcare facilities should be restricted to entrances away from public waiting areas. Suspect cases should not be moved through or temporarily left in waiting rooms.
- Recommended Post-Incident Response Recommendations (Decontamination and Return to Service):
- Personnel should always practice standard environmental infection control procedures, including vehicle/equipment decontamination, PPE, hand hygiene, cough and respiratory hygiene. For additional information reference: CDC's Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus at <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>
- Firefighting Structural Turnout Gear, while the most common type of PPE, should not be used when treating infectious Ebola patients due to the ability of fluids to permeate the clothing materials. However, if contamination does occur, decontamination is vital to preventing cross contamination from occurring. Decontamination of structural turnout gear needs to be done in accordance with NFPA 1851, Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting.
- NFPA 1851 requires that for extreme contamination with body fluids, removal of the contaminants by flushing with water as soon as possible is necessary, followed by appropriate cleaning. In the case of bloodborne pathogens, recommended decontamination procedures include using a .5 to 1% concentration of Lysol, or a 3-6% concentration of stabilized hydrogen peroxide. Liquid glutaraldehyde, available through commercial sources, will also provide high to intermediate levels of disinfectant activity. Further, the current edition of NFPA 1851 states that if a garment is verified as having been exposed to chemical, biological or radiological agents, that garment should be immediately removed from service. When decontamination is not possible, the garments should be discarded in accordance with CDC established procedures. For additional information on disposal see: <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>
- UNDER NO CIRCUMSTANCES should chlorine bleach be used on firefighters' clothing; most systems contain KEVLAR®, either as a blend or as the primary fiber, and KEVLAR® is extremely susceptible to damage when exposed to bleach.
- Additional Information: Decontamination Information was sourced from NFPA 1851 and Globe Care and Cleaning Guidelines. For additional information please see: [NFPA 1851 Website: http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=1851](http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=1851) or [Globe Care and Cleaning Guidelines Website: http://www.globeturnoutgear.com/turnout-gear/user-info/basic-care-cleaning](http://www.globeturnoutgear.com/turnout-gear/user-info/basic-care-cleaning)
- According to the CDC and OSHA, fire service personnel operating in PPE should be decontaminated using soap and water, followed by an EPA-registered disinfectant suitable for non-enveloped viruses (e.g., adenovirus, poliovirus). See the following link for additional information: <http://www.epa.gov/oppad001/chemregindex.htm>. Follow manufacturer instructions for the specific disinfectant.

- When commercial disinfectant products are unavailable, common household bleach and other appropriate disinfectants may be effective alternatives. Ebola virus is susceptible to 3% acetic acid, 1% glutaraldehyde, alcohol-based products, and dilutions (1:10 for ≥ 10 minutes) of 5.25% household bleach (sodium hypochlorite), and calcium hypochlorite (bleach powder)
- Never mix chemicals together. Certain combinations of chemicals can be deadly or can reduce the effectiveness of the disinfectant.
- Decontaminated and removed PPE should be placed in a bio-hazard bag and disposed of in accordance with CDC protocols. If blood, body fluids, secretions, or excretions from a patient with suspected Ebola come into direct contact with your skin or mucous membranes, then you should immediately stop working, wash the affected skin surfaces with soap and water and report exposure to an occupational health provider or supervisor for follow-up.
- Vehicles and equipment used to treat and transport an Ebola patient require thorough disinfection/decontamination. The CDC has recently released an Interim Guide for the environmental Infection Control of the Ebola Virus. Fire Department personnel should always practice standard environmental infection control procedures, including vehicle/equipment decontamination, hand hygiene, cough and respiratory hygiene. As this can be a laborious and time consuming process, consider the impact this may have on your standard day to day operations. Consider where you can get replacement equipment and identify a backup plan for substitute vehicles or mutual aid if required to sustain operations. For additional information, see CDC's <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>



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Additional Information Resources:

The Information contained in this document was sourced from CDC recommendations. For additional information, here are some useful links:

CDC Ebola Page: <http://www.cdc.gov/vhf/ebola/>

NYS Dept. of Health Ebola Page: <http://www.health.ny.gov/diseases/communicable/ebola/>

USAMRIID Ebola Page:
<http://phc.amedd.army.mil/topics/discond/diseases/Pages/EbolaVirusDisease.aspx>

NYS DHSES Ebola Page: <http://www.dhSES.ny.gov/oem/safety-info/ebola/responders.cfm>

NYS OEM Ebola Page: <http://www.dhSES.ny.gov/oem/safety-info/ebola/responders.cfm>

World Health Organization (WHO) Ebola Page: <http://www.who.int/csr/disease/ebola/en/>

OSHA Ebola Page: <https://www.osha.gov/SLTC/ebola/>

NYS Dept of Health – EMS Providers Page:
http://www.health.ny.gov/diseases/communicable/ebola/#ems_providers

CDC EMS Checklist for Ebola: EMS Checklist for Ebola Preparedness:
<http://www.cdc.gov/vhf/ebola/pdf/ems-checklist-ebola-preparedness.pdf>

Other reference documents include:

Ebola Virus Disease (EVD) Screening for EMS Document (evd-screening-criteria.pdf)
<http://www.cdc.gov/vhf/ebola/pdf/evd-screening-criteria.pdf>

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
<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#ppe>

Emerging Infectious Disease Surveillance Tool (SRI/MERS/Ebola) Document
[http://www.emergencydispatch.org/sites/default/files/pdf/ebola_updates/MPDS-EIDS_Tool_\(Ebola\)_v4.0.2_UKE.pdf](http://www.emergencydispatch.org/sites/default/files/pdf/ebola_updates/MPDS-EIDS_Tool_(Ebola)_v4.0.2_UKE.pdf)

Identify, Isolate, Inform: Emergency Department Evaluation and Management for Patients who Present with the Ebola Virus Disease:
<http://www.cdc.gov/vhf/ebola/hcp/ed-management-patients-possible-ebola.html>