



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

Ebola Virus Disease Waste Management Plan Guidance for Healthcare Providers

A. Introduction

The Virginia Department of Health (VDH) is working closely with healthcare facilities and emergency response agencies to provide recommendations and guidance on identifying and treating persons suspected of having or diagnosed with Ebola Virus Diseases (EVD). To support these efforts, the DEQ has developed the following **guidance** for healthcare facilities for preparation of management of Ebola-contaminated waste.

The guidance is based on the following:

- The existing regulatory framework for the management of regulated medical waste found in the Virginia Regulated Medical Waste Management Regulations at 9 VAC 20-120 et. seq.
<http://lis.virginia.gov/000/reg/TOC09020.HTM.HTM#C0120>
- The U.S. Environmental Protection Agency, Occupational Health and Safety Administration, and the National Institute of Occupational Safety and Health joint publication on *Safe Handling, Treatment, Transport, and Disposal of Ebola-Contaminated Waste*
https://www.osha.gov/Publications/OSHA_FS-3766.pdf
- Regulations and guidance established and produced by various state and federal agencies working on Ebola preparedness, including:
 - Centers for Disease Control (CDC)
<http://www.cdc.gov/vhf/ebola/hcp/medical-waste-management.html>
<http://www.cdc.gov/vhf/ebola/prevention/ebola-associated-waste.html>
 - Virginia Department of Health (VDH)
<http://www.vdh.virginia.gov/epidemiology/ebola/HealthCare.htm>
 - U.S. Department of Transportation (US DOT)
<http://phmsa.dot.gov/hazmat/phmsa-provides-guidance-for-transporting-ebola-contaminated-items>
 - OSHA
PPE Selection Matrix for Occupational Exposure to Ebola Virus

- Best management practices (BMPs) observed at hospitals operating in the Commonwealth and around the country.

B. Establish a Waste Management Team and Develop a Written Plan

Form a waste management team with specific training on standardized procedures for waste handling, including wearing appropriate PPE, and protocols for safely bagging and packaging waste, storing waste, and transporting packaged waste. Develop a written plan that addresses each step of the waste management process as described in the below sections.

C. Identification and Segregation of Ebola-Contaminated Waste

If a healthcare facility believes a patient may be infected with Ebola Virus Disease (EVD), any and all waste generated in the treatment of the patient must be segregated and stored separately from all other RMW until the presence of Ebola is confirmed. These wastes include 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 (gowns, masks, gloves, goggles, face shields, respirators, booties, etc.) -- or byproducts of cleaning that are contaminated or suspected of being contaminated.

- If the patient tests positive for EVD, the healthcare facility must continue to segregate and isolate the storage of Ebola-contaminated waste.
- If the patient tests negative for EVD, the segregated waste may be commingled with other RMW and managed via approved protocols.

D. Waste Storage

In planning for a possible Ebola incident, considering where and how to store Ebola-contaminated waste until it can be treated on-site or removed for off-site treatment and disposal is one of the most important steps facilities can take in planning.

- **Storage Areas.** Evaluate the location and capacity of potential storage area(s). Storage areas shall conform to the requirements found in 9 VAC 20-120-330 – 390. Specifically, facilities should examine:
 - *Sanitation.* All areas used to store regulated medical waste must be clean and impermeable to liquids. Carpets and floor coverings with cracks or gaps shall not be used in storage area. Where tile floors are used and seams are present in the tile, the floor must be sealed with wax or other floor coatings in order to meet this requirement. Vectors shall be controlled. (9 VAC 20-120-340)
 - *Access.* All areas used to store regulated medical waste must have access control that limits access to those persons specifically designated to manage regulated medical waste. (9 VAC 20-120-350).

- *Badging system.* Many healthcare facilities have a badge system which is used to limit access to certain areas of the hospital. The facility may consider using this technology to control and limit personnel access to Ebola-contaminated waste storage areas.
- *Chain-of-custody.* The facility may use a chain-of-custody to track the movement of waste within the facility and to track which personnel have been responsible for and/or come into contact with Ebola-contaminated waste.
- *Temperature control.* Any regulated medical waste stored for more than seven (7) days must be refrigerated, stored in an ambient temperature between 35° and 45°F (2° and 7°C). (9 VAC 20-120-360)
- *Storage period.* No regulated medical waste shall be stored for more than 15 days at the site of generation. Procedures shall be provided to ensure that the above storage timeframes are met. (9 VAC 20-120-360)
- *Drainage.* All floor drains shall discharge directly to an approved sanitary sewer system.

- **Packaging.**

The CDC has established comprehensive guidelines for the packaging of Ebola-contaminated waste. The guidelines are published on CDC's website: <http://www.cdc.gov/vhf/ebola/prevention/ebola-associated-waste.html>.

NOTE: With regard to adding disinfectant to the inner packaging, the DEQ received the following clarification. Healthcare workers will pour 300-500 mL of an EPA-approved disinfectant over the waste material in the inner packaging prior to closing the inner packaging.

EPA, OSHA, and NIOSH joint publication also include guidelines for containers. https://www.osha.gov/Publications/OSHA_FS-3766.pdf

- **Emergency permitting for larger volumes of waste.** The care and treatment of persons diagnosed with EVD results in the generation of increased waste volumes. If a healthcare facility generates and stores more than 200 gallons of RMW, including Ebola-contaminated waste, the facility will need to apply for a DEQ emergency permit. The emergency permit can be obtained by contacting Justin Williams, Director, Office of Waste Permitting and Compliance. See below for contact info.

E. On-Site Treatment

For the treatment of Ebola-contaminated waste, the CDC has identified two treatment technologies: autoclave and incineration.

- **Autoclave**

A number of existing healthcare and commercial facilities in Virginia have received a permit-by-rule (PBR) from the DEQ for the treatment of regulated medical wastes by autoclave. These permits are governed by the regulated medical waste regulations. Facilities that have an existing permit may treat the Ebola-contaminated waste on-site by autoclave only. Facilities considering the use of an autoclave to treat Ebola-contaminated waste under an existing PBR should contact Justin Williams, Director, Office of Waste Permitting and Compliance. See below for contact info.

As noted in EPA, OSHA, and NIOSH joint publication: https://www.osha.gov/Publications/OSHA_FS-3766.pdf, facilities which will autoclave their waste should not shred the waste prior to treatment.

- **Incineration**

Currently, no healthcare facilities or commercial facilities exist and/or are permitted for the incineration of regulated medical waste in Virginia.

- **Emergency Permit**

If a healthcare facility intends to contract with a mobile source for the autoclaving or incineration of Ebola-contaminated waste, the facility shall notify the DEQ. All mobile treatment operations will be subject to the provisions of an emergency permit. The emergency permit can be obtained by contacting Justin Williams, Director, Office of Waste Permitting and Compliance. See below for contact info.

F. Packaging and Shipping Off-Site

If a healthcare facility intends to ship Ebola-contaminated waste off-site for proper treatment via autoclave or incineration, the healthcare facility must package the Ebola-contaminated waste per USDOT packaging guidelines

US DOT Packaging Guidelines. “DOT Guidance for Preparing Packages of Ebola Contaminated Waste for Transportation and Disposal” provides guidance to prepare packages containing waste contaminated or suspected of being contaminated with the Ebola virus for transportation to off-site treatment and disposal. The guidance may be retrieved from the PHMSA website: http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/suspected_ebola_patient_packaging_guidance_final.pdf

G. Transportation

If a healthcare facility intends to ship the Ebola-contaminated waste off-site, the transporter must be granted party status to the Special Permit DOT-SP 16279.

- **US DOT Special Permit.** PHMSA issued a non-site specific special permit (Special Permit DOT-SP 16279) to certain waste haulers, which authorizes the transportation in commerce of waste contaminated with or suspected of being contaminated with the Ebola virus for disposal. Ebola-contaminated waste may not be transported by a transporter who has not been granted party status to DOT-SP 16279.
- **Transporter Verification.** Transporters continue to apply for party status. Consequently, the number and names of transporters eligible to transport Ebola-contaminated waste continue to change frequently.

A transporters status with relationship to the permit may be checked via PHMSA's Special Permits Search webpage located here: <http://www.phmsa.dot.gov/hazmat/regs/sp-a/special-permits/search>

H. Off-Site Treatment

Most healthcare facilities already have a Regulated Medical Waste contractor. In preparation for managing waste from the treatment of patient with EVD, the facility should contact its contractor and verify the following.

- **Treatment Facility Verification.** Once the healthcare provider has determined the transporter has been granted party status to DOT-SP 16279, the facility will need to verify the transporter can deliver the Ebola-contaminated waste to a designated treatment facility that is authorized to accept and treat Ebola-contaminated waste.
- **Disposal Facility Verification.** Once the Ebola-contaminated waste is treated by autoclave or incinerator, the waste is no longer considered a Category A Infectious Substance and is no longer a regulated medical waste. The treated waste can be disposed in a permitted solid waste management facility. The healthcare provider will need to verify that the treatment facility has agreements with the disposal facility to accept the treated waste.

I. Training

Waste management personnel will need to be trained according to CDC, OSHA, and VDH requirements and guidelines. Training should be documented.

J. Personal Protective Equipment

OSHA has an establish PPE standard (29 CFR 1910.132) that requires employers to assess the workplace to determine what hazards are present and then choose the appropriate PPE to protect workers. Employers must select PPE that will protect workers against Ebola virus and other hazards to which they may be exposed.

Additional information can be found in EPA, OSHA, and NIOSH joint publication. https://www.osha.gov/Publications/OSHA_FS-3766.pdf. Additionally, facilities should use the *PPE Selection Matrix for Occupational Exposure to Ebola Virus* http://www.dol.gov/osha/pdf/OSHA_FS-3761_PPE_Selection_Matrix_-Ebola_%2811-24-14%29.pdf

For additional information, please contact:

Justin Williams, Director
Office of Waste Permitting and Compliance
Justin.Williams@deq.virginia.gov
804-698-4185