

Appendix 7



Waste Management Guidelines for Ebola Response

21 October 2014

Ebola waste is defined as any untreated medical waste generated in the care of patients with known or suspected Ebola virus disease (EVD) including, but not limited to, medical equipment, sharps, linens, used health care products, used Personal Protective Equipment, and all absorbent or uncleanable items contaminated or potentially contaminated by a suspected EVD patient. Ebola waste is a Category A infectious substance and a Resource Conservation and Recovery Act (RCRA) hazardous waste in the State of Kansas. A RCRA hazardous waste must be transported by a registered hazardous waste transporter and disposed of at a permitted hazardous waste facility (an incinerator). Facilities need to identify such transporters and discuss their requirements prior to an incident, particularly if the facility is unable to manage Ebola waste according to WHO/UN guidelines which recommend sterilization. Ebola waste that has been treated (sterilized) by the generator using effective (autoclaving) procedures may be managed as other Category B Regulated Medical Waste (RMW) in accordance with state and federal transportation and disposal requirements.

<i>Medical Facility WITH Autoclaving Capability</i>	<i>Medical Facility WITHOUT Autoclaving Capability</i>
<p>Sterilize Ebola waste in an on-site autoclave as waste is generated to avoid the accumulation of large volumes of untreated Ebola waste on-site.</p> <ul style="list-style-type: none"> Waste should be in biohazard autoclave bags and should be no more than three-fourths full. Biological and Chemical Indicators should be utilized with every autoclave cycle. Tie bags loosely and add about 50 mL of water to each bag. Tape a biological indicator ampoule to the outside of the bag and place bag in a metal autoclave pan or tray. (Note that effectiveness is increased with metal trays.) Place a chemical indicator (not sterile indicator tape) near the mouth of the bag. Autoclave contents for a <u>minimum of 60 min, at 121°C, and 15psi, with slow exhaust.</u> The Autoclave log should document the contents, duration, time, pressure, and temperature for the autoclave cycle. Document that the chemical indicator strip provides initial indication of a successful run. If the chemical indicator fails, then the sterilization should be repeated with fresh indicator. Label the bag with the date and time of the run that corresponds with the biological indicator ampoule, autoclave log, and chemical indicator for that run. Hold labelled autoclaved waste until the biological ampoule indicates successful sterilization. (NOTE: The biological indicator must be incubated according to manufacturer's directions for <u>48 hours</u> to confirm effectiveness of the autoclave to inactivate organisms.) <u>AFTER biological indicator confirmation</u>, document that bags associated with that run are ready for storage and disposal as Category B Regulated Medical Waste. 	<p>Package the waste following Department of Transportation (DOT) requirements (Title 49, Part 173.196, and other associated DOT guidance).</p> <ul style="list-style-type: none"> Properly label the packaged waste and place into secure storage. As soon as such waste handling processes are initiated, contact KDHE's Bureau of Waste Management to obtain assistance in identifying and selecting a waste transporter and disposal facility.

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Collection and Treatment of Human Body Fluids from Isolated Patient

Human body fluids from a patient in isolation should be collected for disposal as Ebola waste or collected and treated with 1 part of household bleach to 9 parts water for at least 10 minutes or longer prior to discharge to the sanitary sewer. Facilities should discuss preferred concentrations and treatment time for bodily fluid wastes utilizing this method with their Public Waste Water Treatment facility director and local emergency manager.

Toilet bowls should be primed with 1 part of household bleach to 9 parts water based on volume in the toilet bowl prior to introduction of any wastes (i.e., prior to patient use) to ensure wastes voided during toilet equilibrium actions are appropriately treated. Body fluids expelled directly from the patient into a toilet must be treated again with 1 part of household bleach to 9 parts water for *at least 10 minutes* prior to discharge to the sanitary sewer; this will require consideration of the toilet bowl water volume to ensure a 1 part bleach to 9 parts of water solution is achieved during treatment.

Onsite Storage of Ebola Waste

The DOT shipping packaging satisfies the hazardous waste packaging requirement for untreated Ebola waste. Facilities unable to sterilize waste as it accumulates should have this packaging readily available.

- The outer packaging should be rigid plastic 55-gallon drums or larger over-pack plastic drums. These containers are capable of being incinerated with the contained waste.
- All DOT labeling requirements can be included on the "Hazardous Waste" label, which must also include the date the container was placed into storage (*there is a 90-day storage time limit*).
- Affix the DOT "Infectious Substance" label to the outer package.

Labeling information includes the following:

- DOT shipping name - "Infectious substances, affecting humans (Ebola Hazardous Waste)," hazardous class/division 6.2 (DOT), DOT ID # UN2814. The hazardous waste code "EBOLA" is to be put into the waste code section of the uniform hazardous waste manifest.

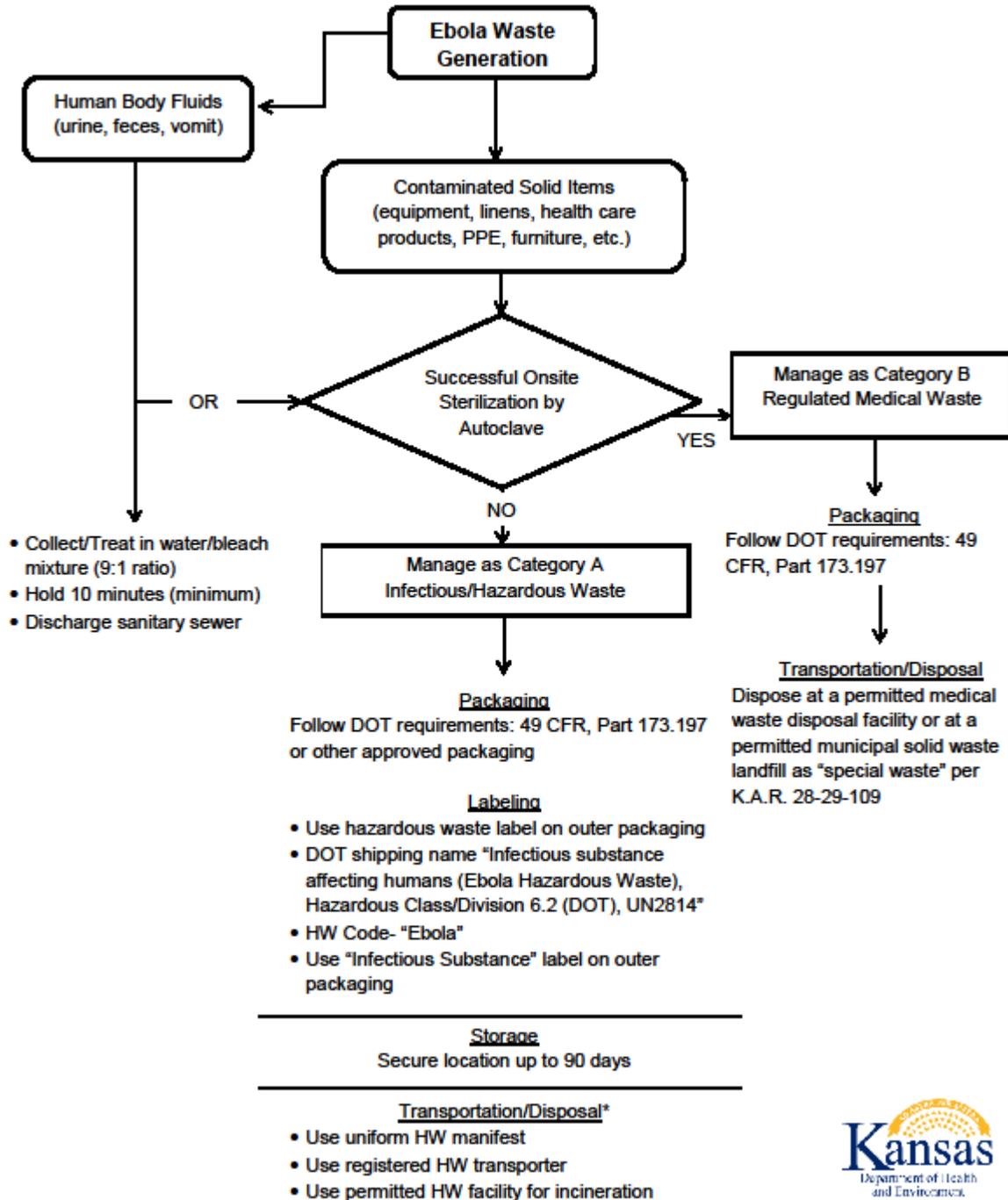
Additional Waste Management Resources:

- US Department of Transportation (DOT) – Hazardous Materials Regulations (HMR, 49 C.F.R., Parts 171-180)

Additional Information on Kansas Ebola Virus Preparedness and Response Plan:

- www.kdheks.gov

Ebola Waste Management in Kansas



*Contact KDHE for assistance



Oct. 27, 2014

Biohazardous (Ebola) Waste Storage at Generating Medical Facilities

Purpose

Any medical facility in Kansas that may generate Ebola waste or suspect Ebola waste should be prepared to properly package that waste and place it into secure storage while awaiting on-site treatment or off-site disposal. This document provides guidance regarding the packaging and storage based upon the classification of Ebola waste in Kansas (both Category A infectious waste and RCRA hazardous waste), applicable special DOT permits and regulations, KDHE's hazardous waste regulations, and likely off-site disposal options.

Note: All KDHE written and verbal guidance advises waste generating facilities to immediately contact KDHE as soon as Ebola waste or suspect Ebola waste begins to be generated to ensure that final waste management decisions are aligned with current disposal facility requirements.

Packaging Requirements

Ebola waste and suspect Ebola waste may be generated in large quantities, as much as five to ten 55-gallon containers per day per patient. The selected packaging should comply with applicable DOT shipping requirements to avoid a need for repackaging prior to shipment. The general DOT regulations for packaging Category A waste can be found at 49 CFR Part 173.196; however, a national Special Permit was issued by DOT providing alternative packaging specifically to address Ebola waste disposal at a certain facility in Texas. This Special Permit 16279 dated October 24, 2014 can be found at

http://phmsa.dot.gov/pv_obj_cache/pv_obj_id_16F699678412C96AF68A6801FF8545F63A9E0100/filename/DOT_SP_16279.pdf

KDHE recommends following the packaging guidelines found in SP-16279 because this will satisfy all on-site storage requirements as well as facilitate subsequent transportation and disposal. This would include inner packaging (a minimum of two plastic film bags) and outer packaging (a triple-walled corrugated fiberboard or poly/plastic 55-gallon container). On-site storage in properly labeled fiberboard or plastic drums would facilitate disposal as Ebola waste if testing confirms the suspicion or as other regulated medical waste if confirmation is not received. The exterior surface of the fiberboard drums should be disinfected prior to movement from the patient care area to the storage area.

Depending upon the selected off-site disposal facility, the fiberboard or plastic drums may need to be placed into large 95-gallon plastic overpack drums (also described in SP-16279).

Selection of a Storage Area

Medical facilities should select a secure area to store Ebola waste that has been packaged in the 55-gallon fiberboard or plastic drums or 95-gallon overpack drums. Secure means locked when waste is not being put into or removed from the storage area. This area should differ from any other hazardous waste storage area used by the facility.

Storage Requirements

Because Ebola waste is "hazardous" in Kansas, certain RCRA rules apply. Storage must be for 90 days or less. Every container moved into the storage area should contain labels that have at a minimum the following (1) the words "Hazardous Waste," (2) the date the container was placed into storage, and (3) an "Infectious Substance" diamond label. The final outer shipping container must also include this information plus the proper DOT shipping name: "Infectious substances, affecting humans (Ebola Hazardous Waste)," hazardous class/division 6.2 (DOT), DOT ID # UN2814 along with the Kansas hazardous waste code: "EBOLA."