

NCOEMS EMERGENCY OPERATIONS PLAN (NCOEMS – EOP)

TAB C2B

WASTE MANAGEMENT PROCEDURES

JUNE 2019

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Preparing a Waste Management Plan as Part of Ebola Patient Care

1. Comply with your State and local regulations for handling, storage, treatment, and disposal of Ebola- associated waste.
2. Determine whether Ebola-associated waste will be inactivated onsite at the hospital or transported offsite for inactivation.
3. Identify a dedicated 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.
 - Onsite inactivation: Ebola-associated waste may be inactivated through incineration or by autoclaving using properly maintained equipment with appropriate biological indicators.
 - Offsite inactivation: Comply with regulations for packaging, transport, and disposal of Ebola- associated waste.
4. When selecting emergency department triage areas for the evaluation of patients with possible Ebola, a designated area should be identified for waste storage pending a determination of whether the patient has Ebola or not. The storage space should meet all applicable fire codes and principles of maintaining a clutter- free, safe environment.
 - Waste bags should never be over-filled. Bags should be closed when two thirds full.
 - If stored within the patient room, all filled solid waste bags and sharps containers should undergo primary closure procedures as outlined below.
 - If stored outside the patient room, all filled solid waste bags and sharps containers should undergo both primary and secondary closure and be removed as outlined below.
5. Be sure healthcare personnel and environmental services staff handling waste are trained to wear recommended PPE (same used for patient care) and follow appropriate putting on and taking off procedures. Use the OSHA PPE Selection Matrix for Occupational Exposure to Ebola Virus to guide selection of appropriate PPE for environmental services and waste collection workers handling, transporting, and disposing of waste.
 - Handling and primary packaging of waste should occur in the patient room and the area where PPE is removed and be performed by the primary healthcare workers (i.e., doctors and nurses) wearing PPE as designated in the guidance for hospitals.

Supplies for Hand Hygiene, Cleaning and Disinfection, and Packaging Waste

1. Leak-proof labeled biohazard bags: The film bags must have a minimum film thickness of 1.5 mils (0.0015 inch) and be 175 liters or smaller (46 gallons).
2. Approved sharps waste container
3. Waste container in patient's room
4. Transport cart
5. Absorbent disposable towels
6. EPA-registered hospital disinfectant for use against the Ebola virus
7. Select a hospital grade disinfectant available as wipe, spray, pull-top, or refill bottles (depending on application) with a label claim for one of the non- enveloped viruses (e.g., norovirus, rotavirus, adenovirus, poliovirus) to disinfect hospital environmental surfaces.

8. Disposable cleaning cloths
9. Alcohol-based hand rub (ABHR) that is at least 60% alcohol
10. Rigid outer receptacle that conforms to U.S. DOT HMR requirements for transport of Category A DOT waste provided by approved waste vendor
 - Note: Outer package must be either a rigid United Nations Standard- or DOT- approved non-bulk packaging. If the outer packaging is fabricated from fiberboard, it must be a minimum of triple wall and contain a 6 mil polyethylene liner. Reference [DOT Guidance for Preparing Packages of Ebola Contaminated Waste for Transportation and Disposal](#).
11. Waste should be packaged with an installed liner provided by the waste vendor.
12. Absorbent material sufficient to absorb potential free liquid (if any) should be placed in the bottom of the rigid outer packaging or the liner of the fiberboard outer packaging.

Primary Packaging of Medical Waste in Patient's Room

Procedures for management of **solid** waste generated during Ebola patient care are outlined in CDC's Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus. Examples of solid waste include medical equipment, sharps, linens, privacy curtains, and used healthcare products (such as soiled absorbent pads or dressings, kidney-shaped emesis pans, portable toilets, used PPE [gowns, masks, gloves, goggles, face shields, respirators, booties, etc.] or byproducts of cleaning).

All placement of receptacles (including sharps containers) and primary packaging by double-bagging of waste should occur in the patient's room and be performed by the primary healthcare workers (i.e., doctors and nurses) wearing PPE as designated in the guidance for U.S. Emergency Departments and [Hospitals](#).

1. Line appropriate-sized waste containers with a leak-proof biohazard bag.
2. Place non-sharps solid waste in the biohazard bag. Bags should not be filled beyond two thirds full to allow safe closure.
3. Carefully place sharps waste in appropriate disposable sharps container and close the container. Containers should not be filled beyond two thirds full to allow safe closure.
4. Prepare filled bags and sharps containers for **onsite inactivation (step 5) or offsite inactivation/incineration (step 6)**.
5. Prior to closure of bag and sharps container, prepare waste for **onsite autoclaving**:
6. Non-sharps waste: if required by the validated procedures, add a sufficient volume of water to primary bag.
7. Sharps waste: if required by the validated procedures, add sufficient volume of water.
8. For **offsite inactivation**, no liquid should be added.
9. Place closed sharps containers in a biohazard bag.
10. Close the bag with a method that will not tear or puncture the bag (e.g., tying the neck of bag with a goose-neck knot) and will ensure no leaks.
11. Apply EPA-registered hospital cleaner/disinfectant (wipe or spray) to the outside surface of the closed bag.
12. Place the wiped/sprayed closed bag into a second biohazard bag.
13. Close the bag with a method that will not tear or puncture the outer bag and will ensure no leaks (e.g., tying the neck of bag with a knot).
14. Apply EPA-registered hospital cleaner/disinfectant (wipe or spray) to the outside surface of the secondary bag.

15. Store the disinfected closed bags in a designated area to await removal.
16. Follow recommended procedures for disinfecting visibly soiled PPE and taking off PPE.

Secondary Packaging and Removal of Waste

1. The healthcare workers (i.e., doctors and nurses) caring for the patient and wearing PPE as designated in the guidance for hospitals should spray or wipe the outside surfaces of double-bagged waste with an EPA-registered hospital disinfectant immediately before removing waste from the room.
2. Upon removing the double-bagged waste from the patient's room, the healthcare worker should place the double-bagged waste in a designated transport cart (for onsite inactivation or a rigid outer receptacle (with absorbent material and liner as described above, for offsite inactivation). The designated container should be located at the periphery of the area for taking off PPE so that removal from the area is efficient and does not create a risk of recontamination of the outer container.
3. Environmental services personnel removing the waste from the care area should only handle the outer container/transport cart and should never open the container or handle the double-bagged waste. PPE should be used according to the OSHA PPE Selection Matrix for Occupational Exposure to Ebola Virus.
4. For **onsite inactivation, environmental services personnel wearing appropriate PPE according to the OSHA PPE Selection Matrix for Occupational Exposure to Ebola Virus [PDF - 3 pages] should:**
 - a. Safely transfer waste in a transport cart to dedicated waste autoclave room or secured storage location.
 - b. Refer [to http://www.cdc.gov/vhf/ebola/hcp/survivability-ebola-medical-waste.html](http://www.cdc.gov/vhf/ebola/hcp/survivability-ebola-medical-waste.html) for guidance on inactivation of Ebola virus in waste.
5. For **offsite inactivation**, refer to U.S. DOT Guidance for Transporting Ebola Contaminated Items, a Category A Infectious Substance:
 - Before removal from the area, the healthcare workers wearing appropriate PPE should close the liner (either by zip tie or similar means of closure as specified by the manufacturer of the packaging), and close the outer lid and packaging. Disinfect the entire exterior surface of the container with an EPA- registered hospital disinfectant (wipe or spray).
 - Environmental services personnel wearing appropriate PPE according to the OSHA PPE Selection Matrix for Occupational Exposure to Ebola Virus should secure the outer lid and packaging and apply the special Category A DOT Waste labels provided and as directed by the manufacturer of the packaging.
 - Safely transport to a designated and secure storage area that is preferably isolated and with limited access for approved waste vendor pickup.

Procedures for Handling Liquid Waste (Body Fluids Including Blood, Urine, Vomit, Feces)

Consult with State or local regulations regarding pretreatment of waste. Sanitary sewers may be used for the safe disposal of patient waste.

1. Primary handling of liquid waste should occur in the patient's room and be performed by the primary healthcare workers (i.e., doctors and nurses) wearing recommended PPE as designated in the guidance for hospitals.
2. Pour waste, avoiding splashing by pouring from a low level, into the toilet.
3. Close the lid first, and then flush toilet.
4. Clean and disinfect flush handles, toilet seat, and lid surfaces with EPA- registered hospital disinfectant/cleaner.
5. Discard cleaning cloths in biohazard bags.
6. Discard emesis and portable toileting containers as solid waste.
7. Follow recommended procedures for disinfecting visibly soiled PPE and removal of PPE.

Handling Spills: Basic principles for spills of blood and other potentially infectious materials are outlined in the U.S. Occupational Safety and Health Administration (OSHA) Bloodborne Pathogen Standard, 29 CFR 1910.1030 and [guidance for Bloodborne Pathogens and Needlestick Prevention](#).

1. Spills should be managed by the doctors and nurses caring for the Ebola patient and by wearing recommended PPE as designated in the guidance for hospitals.
2. Isolate the area of the spill; do not let other individuals access the area until disinfection is completed.
3. Place absorbent material on the spill (a solidifier agent can be used). Pour the
4. EPA-registered disinfectant over the spill and allow sufficient contact time
5. (according to manufacturer's instructions for treating spills).
6. Use disposable absorbent towels to remove bulk spill material. Dispose of the towels in a biohazard bag as specified above.
7. Apply the EPA-registered hospital disinfectant to the cleaned surface and allow the specified contact time.
8. Use disposable cleaning cloths or wipes to wipe the treated area.
9. Follow handling of solid waste protocol as described above to discard materials used for containing the spill and for cleaning and disinfection.
10. Follow recommended procedures for disinfecting visibly soiled PPE and taking off PPE.

<https://www.cdc.gov/vhf/ebola/clinicians/cleaning/handling-waste.html>