Handling of Human Remains Containing Ebola Virus Disease

University of Nebraska Medical Center

Nebraska Medicine

Objectives

After reviewing this presentation, participants will be able to:

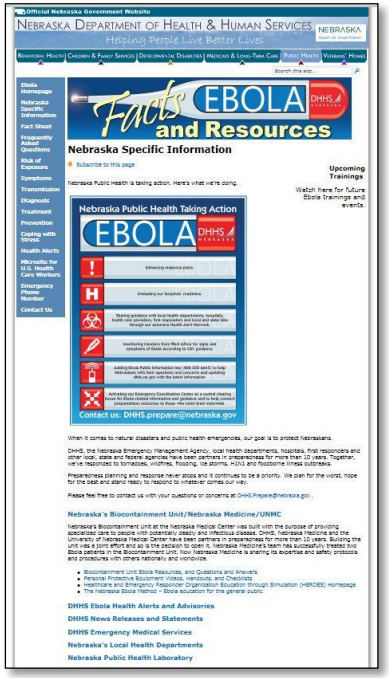
Explain the process of preparing human remains of an Ebola virus infected patient for cremation or burial.

Verbalize understanding of the infection control practices needed to safely process the remains of a deceased patient with Ebola virus disease.

Describe the mortuary care of Ebola infected human remains.

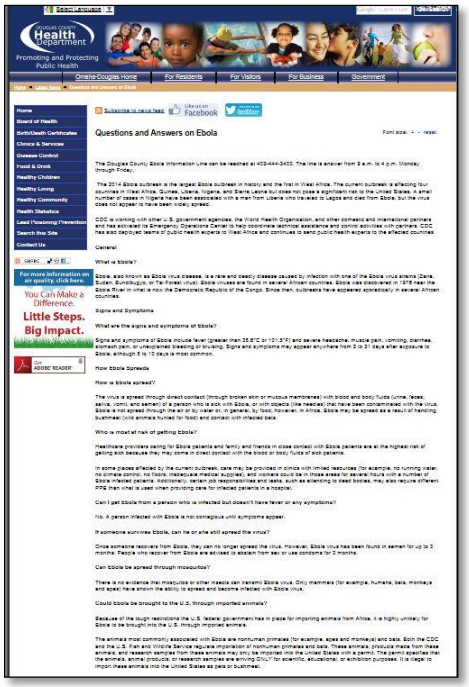
Describe how learnings obtained through this education offering will be applied at participant's place of work to prevent disease transmission during the care of deceased patients from Ebola Virus.

Nebraska Resources



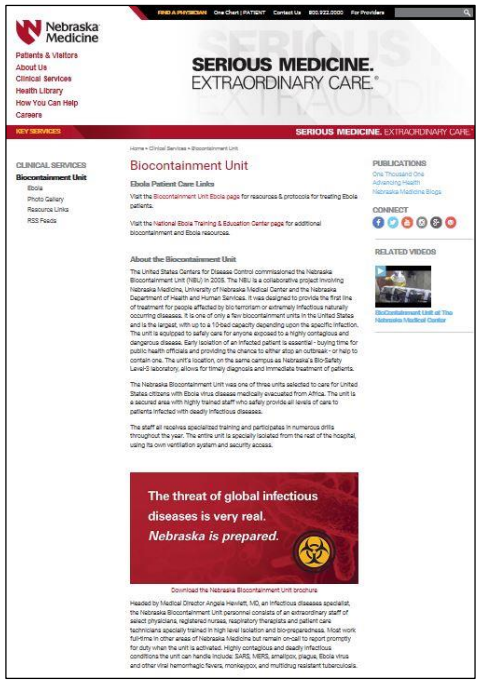
Nebraska Department of Health and Human Services

http://dhhs.ne.gov/publichealth/Ebola/Pages/NESpecific.aspx



Douglas County Public Health Department

http://www.douglascountyhealth.com/latest-news/413-questions-and-answers-on-ebola



The Nebraska Biocontainment Unit

http://www.nebraskamed.com/biocontainment-unit/

Nebraska Funeral Directors Association

http://nefda.org/2014/10/guidance-for-safe-handling-of-human-remains-of-ebola-patients-in-us-hospitals-and-mortuaries/

Nebraska Public Health Departments

Douglas County Public Health Department	http://www.douglascounty-ne.gov/
Panhandle Health District	http://panhandlehealthdistrict.org/
North Central District Health Department	http://www.ncdhd.ne.gov/
West Central Health Department	http://www.wcdhd.org/
Southwest Nebraska Public Health Department	http://www.swhealth.ne.gov/
Loup Basin Public Health Department	http://www.loupbasinhealth.com/
Two Rivers Public Health Department	http://www.trphd.org/
Northeast Nebraska Public Health Department	http://www.nnphd.org/
Elkhorn Valley Public Health Department	http://www.elvphd.org/
East-Central District Health Department	http://ecdhd.ne.gov/
Three Rivers Public Health Department	http://threeriverspublichealth.org/
Sarpy/ Cass Department of Health & Wellness	http://www.sarpycasshealthdepartment.org
Southeast District Health Department	http://www.sedhd.org/
Four Corners Health Department	http://www.fourcorners.ne.gov
Lincoln-Lancaster County Health Department	https://lincoln.ne.gov/city/health/
Southeast District Health Department	http://www.sedhd.org/
Public Health Solutions	http://phsneb.org/

Why such a high emphasis on the safe handling of Ebola virus infected remains

Many secondary cases of Ebola virus disease in Africa was a result of handling deceased remains during burial practices.

According to the World Health Organization 80% of secondary cases in Sierra Leone were related to traditional funeral and burial practices.

Due to the risk to healthcare and mortuary providers, the Centers for Disease Control and Prevention provided guidance that was available to all health and mortuary care providers in an effort to prevent the spread of infection from mortuary practices in the United States.

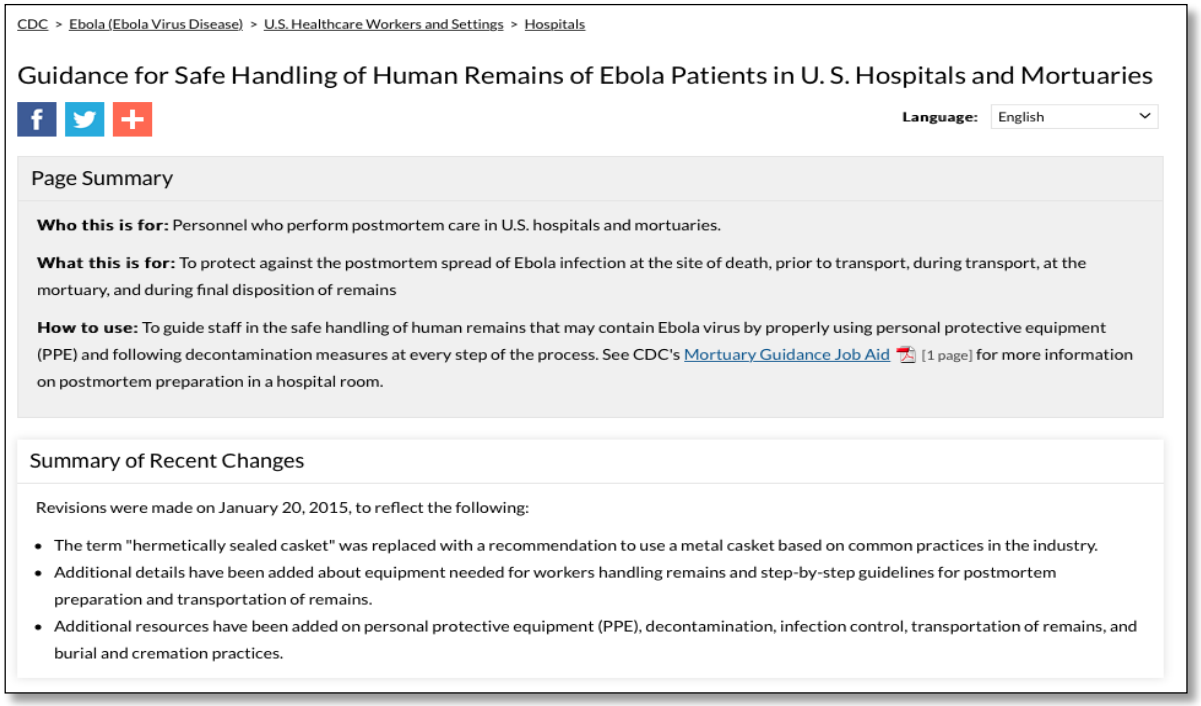
Personal Protective Equipment

Anyone preparing Ebola infected remains must wear personal protective equipment (PPE) that is impervious to fluids and be trained in the process of donning and doffing PPE correctly.

NOTE:
PPE is not required when handling the cremated remains or the hermetically sealed closed casket.

Center for Disease Control and Prevention Guidelines

Due to the risk to healthcare and mortuary providers, the CDC provided guidance for the safe handling of Ebola infected human remains.



CDC > Ebola (Ebola Virus Disease) > U.S. Healthcare Workers and Settings > Hospitals

Guidance for Safe Handling of Human Remains of Ebola Patients in U. S. Hospitals and Mortuaries

Language: English

Page Summary

Who this is for: Personnel who perform postmortem care in U.S. hospitals and mortuaries.

What this is for: To protect against the postmortem spread of Ebola infection at the site of death, prior to transport, during transport, at the mortuary, and during final disposition of remains

How to use: To guide staff in the safe handling of human remains that may contain Ebola virus by properly using personal protective equipment (PPE) and following decontamination measures at every step of the process. See CDC's Mortuary Guidance Job Aid [1 page] for more information on postmortem preparation in a hospital room.

Summary of Recent Changes

Revisions were made on January 20, 2015, to reflect the following:

- The term "hermetically sealed casket" was replaced with a recommendation to use a metal casket based on common practices in the industry.
- Additional details have been added about equipment needed for workers handling remains and step-by-step guidelines for postmortem preparation and transportation of remains.
- Additional resources have been added on personal protective equipment (PPE), decontamination, infection control, transportation of remains, and burial and cremation practices.

http://www.cdc.gov/vhf/ebola/healthcare-us/hospitals/handling-human-remains.html

Mortuary Guidance Job Aid

The CDC guidance includes Step-by-Step instructions on the postmortem preparation in a hospital room that was designed to prevent the spread of Ebola virus infection.

Mortuary Guidance Job Aid: Postmortem Preparation in a Hospital Room

Appropriate personal protective equipment (PPE) must be worn while performing these tasks.

1. Turn on thermal sealer.
2. Use digital camera or mobile phone to take a photograph of the deceased's face. Send photo via Wi-Fi, e-mail, or text message to site manager through secure means. Decontaminate or properly discard camera or mobile phone.
3. Position gurney with three pre-opened body bags next to hospital bed.
4. Pull bed sheet(s) up and around body. Do not wash or clean body. Do not remove inserted medical equipment from body.
5. Remove first bag from gurney. Gently roll body wrapped in sheets while sliding first bag under body.
6. Complete transfer of body to first bag. Zip up bag. Minimize air in bag.
7. Disinfect gloved hands using alcohol-based hand rub (ABHR). If any areas of PPE have visible contamination, disinfect with an EPA-registered disinfectant wipe.
8. Disinfect outside of first bag with an EPA-registered hospital disinfectant.
9. Transfer first bag with body to gurney, placing it on top of second bag.
10. Disinfect gloved hands using ABHR.
11. Fold second bag around first bag and heat seal approximately 2" from edges. Remove air from second bag. Heat seal bag again approximately 1" below initial seal and heat seal diagonally across corners. Use scissors to trim off any excess material along seam. Turn off or unplug thermal sealer. Decontaminate thermal sealer before it is removed from hot zone or reused.
12. Disinfect outside of second bag with EPA-registered hospital disinfectant.
13. Disinfect gloved hands using ABHR.
14. Work third bag around second bag. Zip up third bag. Zip tie the zipper shut.
15. Disinfect gloved hands using ABHR.
16. Wheel gurney to decontamination area.
17. Decontaminate surface of body bag with EPA-registered hospital disinfectant.
    - Begin by applying the hospital disinfectant to top of bag and any exposed areas of gurney's cot.
    - Roll bag to one side to decontaminate half of bottom of bag and newly exposed portion of gurney's cot.
    - Repeat with other side of bag and gurney.
    - After visible soil has been removed with EPA-registered disinfectant wipe, reapply EPA-registered hospital disinfectant and allow sufficient contact time, as specified by manufacturer.
18. Disinfect surfaces of gurney from handles to wheels with an EPA-registered hospital disinfectant.
19. Disinfect gloved hands using ABHR.
20. Push gurney so only gurney and decontaminated body bag enter cold zone. Do not enter cold zone. A new set of workers will receive the body.
21. Proceed to PPE removal area.

For more information: Guidance for Safe Handling of Human Remains in U.S. Hospitals and Mortuaries. http://www.cdc.gov/vhf/ebola/healthcare-us/hospitals/handling-human-remains.html

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

http://www.cdc.gov/vhf/ebola/pdf/postmortom-preparation.pdf

Mortuary Guidance Job Aid

1. Turn on thermal sealer.

2. Use digital camera or mobile phone to take a photograph of the deceased's face. Send photo via Wi-Fi, e-mail, or text message to site manager through secure means. Decontaminate or properly discard camera or mobile phone.

Mortuary Guidance Job Aid

3. Position gurney with three pre-opened body bags next to hospital bed.

Bag 1
6 ml thickness with factory sealed seams (heat or welded)
Must be impervious to fluids with the zipper on top.

Bag 2
Chlorine-free heat sealable material that can be heat-sealed around the body to form a leak-proof body bag.

Bag 3:
Final layer. This must be laminated vinyl or other chlorine-free material, minimum of 18 mil thickness
Handles should be riveted, not sewn and reinforced with handle straps that run under the pouch.
Must be impervious to fluids.
Lockable Zipper on top.

Mortuary Guidance Job Aid

4. Pull bed sheet(s) up and around body. Do not wash or clean body. Do not remove inserted medical devices from body.

Mortuary Guidance Job Aid

5. Remove first bag from gurney. Gently roll body wrapped in sheets while sliding first bag under body.
6. Complete transfer of body to first bag. Zip up bag. Minimize air in bag.
7. Disinfect gloved hands using alcohol-based hand rub (ABHR). If any areas of PPE have visible contamination, disinfect with an EPA-registered disinfectant wipe and consider a change in outer gloves.

Mortuary Guidance Job Aid

8. Disinfect outside of first bag with an EPA-registered hospital disinfectant.
9. Transfer first bag with body to gurney, placing it on top of second bag.
10. Disinfect gloved hands using ABHR.

Mortuary Guidance Job Aid

11. Fold second bag around first bag and heat seal approximately 2” from edges. * **Remove air from second bag**.

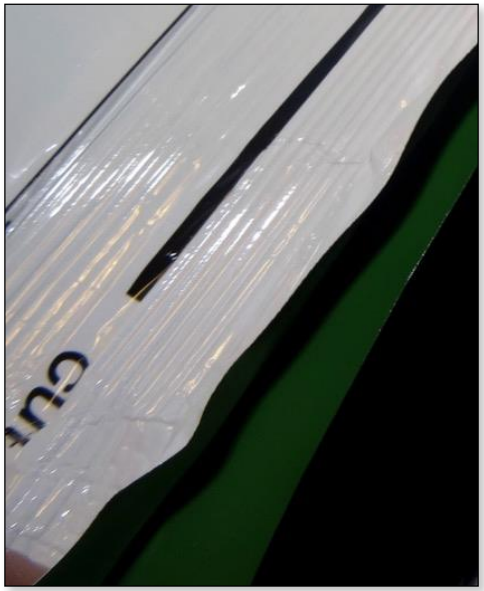
Ridges from thermal sealer

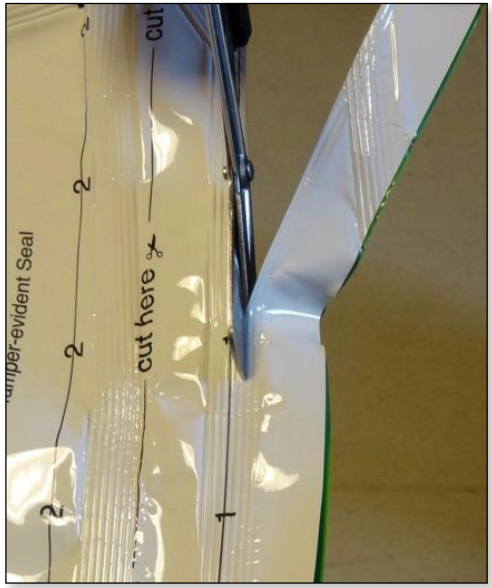
Note: the latest version of Bioseal has printed information that directs the primary function of the material.

It does not direct the sealing process for containing Ebola virus remains.

Mortuary Guidance Job Aid

11. Use scissors to trim off any excess material along seam. Turn off and unplug thermal sealer. Decontaminate thermal sealer before it is removed from hot zone or reused.





Mortuary Guidance Job Aid

12. Disinfect outside of second bag with EPA-registered hospital disinfectant.
13. Disinfect gloved hands using ABHR.
14. Work third bag around second bag. Zip up third bag. Zip tie the zipper shut.
15. Disinfect gloved hands using ABHR.

Mortuary Guidance Job Aid

16. Wheel gurney to decontamination area.
17. Decontaminate surface of body bag with EPA-registered hospital disinfectant.
    - Begin by applying the hospital disinfectant to top of bag and any exposed areas of gurney's cot.
    - Roll bag to one side to decontaminate half of bottom of bag and newly exposed portion of gurney's cot.
    - Repeat with other side of bag and gurney.
    - After visible soil has been removed with EPA-registered disinfectant wipe, reapply EPA-registered hospital disinfectant and allow sufficient contact time, as specified by manufacturer.

Mortuary Guidance Job Aid

18. Disinfect surfaces of gurney from handles to wheels with an EPA-registered hospital disinfectant.
19. Disinfect gloved hands using ABHR.
20. Push gurney so only gurney and decontaminated body bag enter cold zone. Do not enter cold zone. A new set of workers will receive the body.
21. Proceed to PPE removal area.

Guidance for Safe Handling of Human Remains in U.S. Hospitals and Mortuaries.
http://www.cdc.gov/vhf/ebola/healthcare-us/hospitals/handling-human-remains.html

Transportation of Human Remains

Minimize transportation of remains that contain Ebola virus to the extent possible. Coordinate all transportation, including local transport for mortuary care or burial, with relevant local and state authorities in advance.

Avoid transporting non-cremated remains via aircraft.

Human remains transported for interment, cremation, or medical research at a college, hospital, or laboratory are **excepted** from the U.S. Department of Transportation's Hazardous Materials Regulations (49 C.F.R., Parts 171-180). See §173.134(b)(14).

(http://www.cdc.gov/vhf/ebola/healthcare-us/hospitals/handling-human-remains.html)

Key Points for Healthcare Providers

- Ebola virus **can** be transmitted in postmortem care settings.
- Only personnel who are trained in the handling of infected human remains and wearing recommended PPE may touch or move any remains that contain Ebola virus.
- Do not remove any wound dressings or other treatment items.
- Do not remove any inserted medical devices.
- Complete all necessary documentation prior to removal of patient remains to comply with hospital, State and local health department regulations.
- Have a pre-existing MOU with a crematory and funeral director for cremation services after receipt of permission from family and the local health department.
- Cremation is preferred but if cremation is not an option because of safety concerns, the body should be buried in a standard metal casket or other comparable burial method.

Key Points for Morticians

- Do not perform embalming. The risks of occupational exposure to Ebola virus while embalming outweighs its advantages; therefore, bodies infected with Ebola virus should **not** be embalmed.
- Do not open the body bags.
- Do not remove remains from the body bags. Bagged bodies should be placed directly into a hermetically sealed casket.
- Mortuary care personnel should wear PPE listed above (surgical scrub suit, surgical cap, impervious gown with full sleeve coverage, eye protection (e.g., face shield, goggles), facemask, shoe covers, and double surgical gloves) when handling the bagged remains.
- In the event of leakage of fluids from the body bag, thoroughly clean and decontaminate areas of the environment with EPA-registered disinfectants which can kill a broad range of viruses in accordance with label instructions. Reusable equipment should be cleaned and disinfected according to standard procedures.

http://nefda.org/2014/10/guidance-for-safe-handling-of-human-remains-of-ebola-patients-in-us-hospitals-and-mortuaries/

To View a Video of the Nebraska Biocontaiment Unit Process

Watch this video by clicking this link: https://youtu.be/5NdiUfCNpIA

University of Nebraska Medical Center

Nebraska Medicine