



Office of the
Provincial Health Officer

B.C. Ebola Virus Disease Guidelines for the Management of Human Remains

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Contents

| | |
|---|----|
| A. Background | 2 |
| B. Guiding Principles | 2 |
| C. Pre-Event Planning..... | 3 |
| Hospitals..... | 3 |
| Community..... | 3 |
| Required Resources | 4 |
| D. Management of the Human Remains | 5 |
| Notification | 5 |
| Procedure for Managing Remains..... | 5 |
| Morgue Staff | 6 |
| E. Transportation | 6 |
| F. Mortuary Care and Disposal..... | 7 |
| G. Environmental Cleanup..... | 7 |
| H. References | 8 |
| Appendix A: Management of Human Remains Hospital Algorithm | 9 |
| Appendix B: Management of Human Remains Community Algorithm | 10 |

A. Background

In patients with Ebola virus disease (EVD), virus can be detected in all bodily fluids, and there is a high risk of transmission when handling remains after death. Transmission can occur through direct handling of the body without appropriate personal protective equipment (PPE), through splashes of blood and bodily fluids onto unprotected mucosa, and through lacerations and puncture with contaminated instruments used during post-mortem care.

This document provides guidelines for safe handling of human remains in both a hospital and community setting of a person under investigation¹, a confirmed case of EVD, or the death of an individual being followed by Public Health under EVD contact management measures (hereinafter referred to as deceased EVD patient). The risk of death in the community is extremely low. As such, these guidelines do not provide for all the services that may be required to support such an event. Some of the planning will need to occur locally on a case-by case basis in this unlikely event.

This guideline has been developed in collaboration with infection control and public health experts from across B.C., under the Expert Clinical and Public Health working groups of the Provincial Ebola Task Force. The guideline is aligned with recommendations from the Public Health Agency of Canada, the U.S. Centres for Disease Control, and experience from other centres.

B. Guiding Principles

The following guiding principles are to be followed for all situations that result in handling human remains of a deceased EVD patient, regardless of setting:

- Keep handling of human remains to a minimum.
- Only trained personnel should handle the remains.
- Wear appropriate PPE for **higher risk** transmission scenarios.² Change the PPE (as many times as needed) if it has become contaminated with blood or bodily fluids.
- Once sealed, do not open the body bag or casket. Once sealed and disinfected, the bagged body and casket are not considered infectious and PPE is not required during transport and final disposal.

¹ Anyone with a potential exposure to Ebola virus, any symptoms compatible with EVD.

² B.C. Ebola Virus Disease Personal Protective Equipment Guidelines: www.health.gov.bc.ca/pho/pdf/ebola-ppe-guidelines-2014-11-17.pdf

- Follow PPE donning and doffing protocols.³
- Sensitively communicate to the family of the deceased that religious/ritual preparation of the body, washing, dressing, viewing, touching or kissing of the deceased are not allowed.
- Testing for EVD or any other potential causes of death should be avoided. Consult the medical health officer prior to conducting any testing.

In the event that human remains are in a community setting:

- If the case is not EVD confirmed, the medical health officer will perform a risk assessment of the likelihood of the dead person having EVD to help direct the next steps.

C. Pre-Event Planning

Hospitals

To prepare for a situation in which health authorities may need to manage the remains of a deceased EVD patient in a hospital, health authorities should:

- Identify hospital personnel who may manage human remains of a person under investigation or confirmed case of EVD and ensure access to and training in the use of appropriate PPE for higher risk transmission settings.⁴
- Identify a funeral home for transport and final management of the body (for cremation or burial of the body). Verify procedures for pickup and transportation of human remains with the funeral home, using existing procedures as much as possible.
- Work with Health Shared Services BC to ensure appropriate resources are available.

Community

To prepare for a situation in which health authorities may need to manage the remains of a deceased EVD patient in the community, health authorities, led by the medical health officer, should:

- Have a plan for isolating and securing the body all the way to pick-up and transportation by the funeral directors for final management (cremation or burial).

³ Recommendations for Donning and Doffing PPE for Health Care Workers during the Management of Confirmed Cases of EVD: Higher Transmission Risk Scenario: www.health.gov.bc.ca/pho/pdf/ebola-higher-transmission-risk-2014-11-17.pdf

⁴ B.C. Ebola Virus Disease Personal Protective Equipment Guidelines: www.health.gov.bc.ca/pho/pdf/ebola-ppe-guidelines-2014-11-17.pdf

- Identify an individual to pronounce the death at the location of the deceased (a physician, or nurse practitioner).
 - ▶ Deaths following certain circumstances (e.g., unexpected or from disease, sickness or unknown cause, for which the person was not treated by a medical or nurse practitioner) must be reported to the coroner, pursuant to s2(1) of the *Coroners Act*.⁵
- Contact Quantum Murray, an environmental services company, to handle the body of a deceased EVD patient. They can be reached 24/7 at 1 877 378-7745.
 - ▶ Quantum Murray will make arrangements to transport waste via Stericycle, including PPE, collected after the handling of a confirmed EVD case to a suitable facility to incinerate or autoclave to make it non-infectious.⁶
- Identify a funeral home for transport and final management of the body (for cremation or burial of the body). The funeral home will bring a casket to the site of the deceased and will transport the body for cremation or burial.

Required Resources

The following resources should be available – either in advance or soon after a case emerges – to those who have the potential to handle the body of a deceased EVD patient. Health authorities can work with Health Shared Services BC for sourcing, when required:

- Higher-transmission risk PPE as outlined in the provincial guidelines.²
- Appropriate body bag(s):
 - ▶ hermetically sealed body bag (e.g. BioSeal®), OR
 - ▶ two regular leak-proof body bags not less than 150 µm thick.
- Hospital-grade disinfectant to decontaminate the outside of the body bag (further detail provided below).
- Waste management supplies consistent with B.C. guidelines.^{6,7}

⁵ In some instances, the police will attend the scene of a death in the community. The medical health officer should connect with the police to advise on appropriate safety precautions given the particular circumstances.

⁶ B.C. Guidance on Environmental Management of Potential Ebola Contamination in Community Settings: www.health.gov.bc.ca/pho/pdf/environmental-contamination-in-communitysettings.pdf

⁷ Recommendations for Environmental Services, Biohazardous Waste Management, and Food and Linen Management for Ebola Virus Disease (EVD): www.health.gov.bc.ca/pho/pdf/recommendations-for-environmental-services-waste-management-for-evd.pdf

D. Management of the Human Remains

Notification

Death in Hospital:

The medical microbiologist and/or medical health officer on call should be consulted for any decision making on movement and burial of human remains of a deceased EVD patient. The medical microbiologist on call will notify the hospital morgue personnel and Public Health.

Death in Community:

The death of a patient with EVD must be communicated to the medical health officer on call for the health authority where the death occurs.

Procedure for Managing Remains

1. Pronounce the death at the site of the deceased (duty of a physician, or nurse practitioner).
2. At the site of death, wrap the body in the patient's linen.
 - Leave intravenous lines or endotracheal tubes in place. Do not wash or clean the body.
 - Discuss with the medical health officer about retaining personal items on the body of sentimental value to the family. Disinfect any items removed from the body.⁸
 - Change the PPE (as many times as needed) if it has become contaminated with blood or bodily fluids.
3. Place the body into a body bag. Use either:
 - Hermetically sealed body bag (e.g., BioSeal®), OR
 - Two regular leak-proof body bags not less than 150 µm thick – place the body into the first body bag and close the zipper/seal. Place the body into a second leak-proof bag and close the zipper/seal.
4. Perform surface decontamination of the outer body bag by removing visible contamination. Use either:
 - A hospital grade disinfectant with a Drug Identification Number and a broad spectrum virucidal claim (Public Health Agency of Canada, 2014), OR
 - A 10 per cent solution of common household bleach in water (one cup of bleach in nine cups of water) (Occupational Health and Safety Administration, 2014).

A list of disinfectants for use against Ebola Virus is available on the US Environmental Protection Agency (EPA) website: www.epa.gov/oppad001/list-l-ebola-virus.html.

5. Once visible contamination has been removed, re-apply the disinfectant and allow to air dry.

⁸ Based on type of material being disinfected, refer to Recommendations for Environmental Services, Biohazardous Waste Management, and Food and Linen Management for Ebola Virus Disease (EVD) – Standard Operating Procedures (To be published)

6. Label outside of bag with red marker with the indication of “highly-infectious material, suspect/confirmed EBOLA.”
7. Do not remove this label and do not open the bag.
8. All documents pertaining to the identification of the body should be accessible in a manner consistent with privacy legislation.

Morgue Staff

- The medical microbiologist on call will have notified hospital morgue staff to expect the body, if appropriate.
- Do not remove the remains from the body bag(s).
- Release of the body will not be done until the case is discussed with the medical health officer.

E. Transportation

The transportation of remains that contain (or are suspected to contain) EVD must be kept to a minimum. The following guidelines apply when transportation is required:

- Co-ordinate all transportation for burial or cremation through the medical health officer. The medical health officer will co-ordinate with the funeral home to bring a casket to the site of the deceased and transport the body of the deceased for cremation or burial.
 - ▶ The type of casket is determined based on the wishes of the family for burial or cremation.
 - The body should be placed in a hermetically sealed casket for burial.
 - The body should be placed into a regular casket for cremation.
 - ▶ Transportation should be arranged promptly to ensure timely pick-up of the deceased.
- Once the body has been placed in the body bag and the bag(s) have been decontaminated, transfer the bagged body into the casket provided by the funeral home at the site of the deceased.
 - ▶ In a hospital setting, funeral home personnel will use existing procedures with morgue facilities for the pickup and transportation of human remains.
 - ▶ In a community setting, funeral home personnel and the casket will remain outside the contaminated site and the decontaminated bagged body will be transferred by the Quantum Murray team to the casket.
 - ▶ Personal protective equipment need not be worn when transporting or handling the decontaminated bagged body or the casket.

- ▶ The funeral home will transport the body to its final destination (i.e. burial site or crematorium). **Do not hold the body in a morgue or funeral home.**
 - There is a need for timely communication between the medical practitioner/coroner signing the Medical Certificate of Death and Registrar(s) of Death (Funeral Home Staff) to ensure timely completion of permits for burial or cremation.
 - If the deceased will be cremated, the medical health officer must recommend that cremation take place immediately.⁹

F. Mortuary Care and Disposal

The body of a person under investigation or confirmed EVD case is to be cremated or buried in the casket. **Do not embalm the remains.**

The body may not be viewed, and the casket and the body bag must not be opened.

Personal protective equipment (PPE) is not needed when handling the casket. No PPE is needed when handling the cremated remains.

G. Environmental Cleanup

Hospital:

Once the body is removed from the room, clean the room as per the provincial EVD recommendations for B.C. Guidance on Environmental Management of Potential Ebola Contamination in Community Settings⁶ as well as Standard Operating Procedures for Cleaning.⁹

Community:

Once the body is removed, clean the room as per the B.C. Guidance on Environmental Management of Potential Ebola Contamination in Community Settings.⁶

⁹ Provincial legislation in B.C. requires that a minimum of 48 hours after the initial time of death must elapse before cremation may take place. However, the local health authority may authorize cremation in less than 48 hours.

H. References

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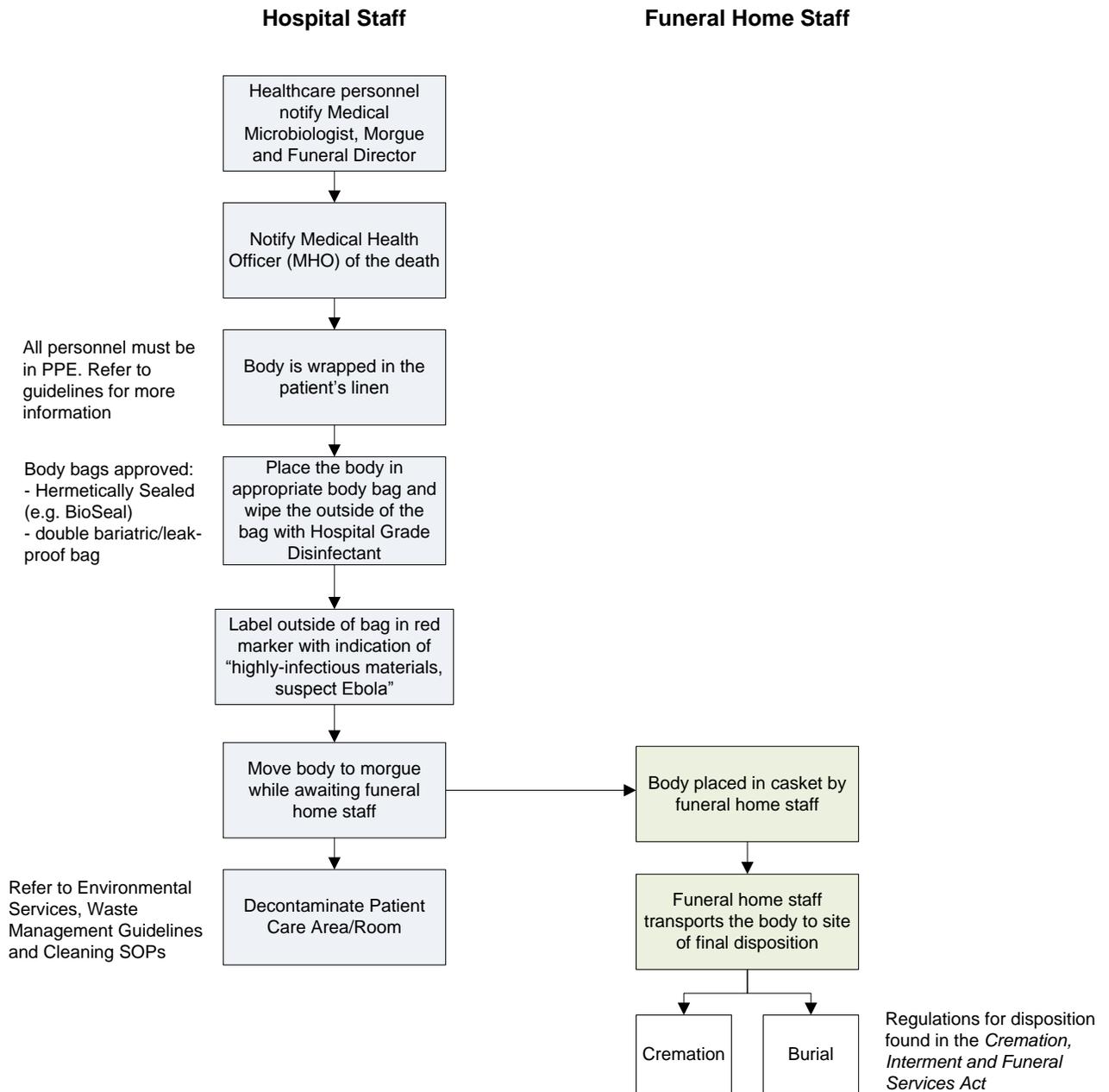
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Appendix A: Management of Human Remains Hospital Algorithm



Appendix B: Management of Human Remains Community Algorithm

