Government of the District of Columbia
Department of Health
Office of the Chief Medical Examiner

TO: **All District of Columbia Funeral Directors**

FROM: **Joxel Garcia, MD, MBA**
Director, Department of Health

Roger A. Mitchell, Jr., MD
Chief Medical Examiner, Office of the Chief Medical Examiner

DATE: **November 10, 2014**

SUBJECT: **Disposition of Remains of Persons with Ebola**

As the District continues to enhance its preparedness measures in the wake of the Ebola Virus Disease (Ebola) crisis currently affecting the West African nations of Guinea, Liberia, and Sierra Leone, the Department of Health is working closely with health facilities and providers to stay abreast of the disease and work to prevent its transmission should there be a confirmed case in the future in the District of Columbia.

The Centers for Disease Control and Prevention (CDC) has issued Guidance for the Safe Handling of Human Remains of Ebola Patients in U.S. Hospitals and Mortuaries. http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients-us-hospitals-mortuaries.html. In order to best ensure the health and safety of the District's residents, the Department of Health (DOH) has determined that in the event of a death caused by Ebola, DOH and the District's Office of the Chief Medical Examiner (OCME) will assume all control and management of the appropriate disposition of human remains.

In the District of Columbia, all human remains of Ebola patients will be promptly cremated. The specific protocol for responding, transporting, and disposing of the remains will be managed and completed by OCME in accordance with its protocol attached to this directive. This protocol will be applicable to deaths in hospitals, in homes, or in any other circumstance of death in the District in which Ebola may be the cause, or suspected cause of death.

If your establishment is contacted to provide services for loved ones for whom you have reason to be concerned about Ebola, you should immediately notify DOH by calling (844) 493-2652 or the OCME by calling (202) 698-9000 to request further instructions on how to proceed. Adherence to this directive will alleviate the necessity of DOH instituting isolation and quarantine measures for mortuary service personnel or businesses and continue to allow the District to protect the health, safety, and welfare of resident of and visitors to the District of Columbia. We encourage you and your staff to visit www.Ebola.DC.Gov for District related preparedness information and updates.

Attachment
cc:
Rabbiah A. Sabbakhan, Interim Director, DCRA
Willis Bradwell, Jr., Vital Records Registrar, DOH

Interim DRAFT Concept of Operations (ConOps) for the Management of Decedents with Confirmed or Suspected Viral Hemorrhagic Fever (VHF)

Mass Fatality Response /Continuity of Operations
Date: 10-23-2014

District of Columbia
Office of Chief Medical Examiner

Emergency Preparedness and Continuity of Operations Planning (COOP)

Contents

Overview

The District of Columbia (DC) Office of the Chief Medical Examiner (OCME) OCME serves the District as an agency with subject-matter expertise for the planning, coordination and management of Mass Fatality Incidents (MFIs). This expertise is gleaned from and informed by our day-to-day activities of investigation, recovery, transport, storage, tracking, and processing of decedents that fall within the jurisdiction of the OCME, but also from the vast knowledge and experience of our staff and leadership in the management of MFIs both within the District and across the country.

With the ongoing epidemic of the Ebola Viral Hemorrhagic Fever (VHF) virus there is a need to address the management of decedents in the District who may expire as a result of this infectious disease. The DC OCME has begun to formulate a concept of operations that will allow the District to properly respond to VHF-related deaths. This concept requires extensive district-wide coordination from fatality management service (FMS) support agencies and those agencies who regularly interact with the OCME. This interim draft document represents the OCME's initial effort at conceptualizing and operationalizing a district-wide methodology for managing VHF-related deaths.

Purpose

The DC OCME Interim DRAFT Concept of Operations (ConOp) for the Management of Decedents with Confirmed or Suspected Viral Hemorrhagic Fever (VHF), hereafter referred to as the "Interim VHF ConOp", shall serve as an operational guide where the OCME can manage its response to VHF-related deaths. This guidance document shall serve as a resource for the management of VHF-related deaths based on published guidelines from the U.S. Centers for Disease Control (CDC). This document also represents the beginning of a process for promulgating an integrated, district-wide and comprehensive approach to managing these cases on an individual basis, as well as for mass fatalities.

This interim document and the rationale from which it has been conceived, are considered to represent the DC OCME's ConOp given the current situation, available information and planning assumptions. In light of the recent introduction of the Ebola/VHF Virus into the Continental U.S., there is currently a robust and ongoing exchange of data and information between District agencies as well as within the health and medical communities at-large. The Ebola virus and other VHFs have been shown to maintain their pathogenicity postmortem. This is cause for concern among the medical examiner and public health communities. As such, this ConOp has been drafted in the current dynamic environment to provide the flexibility required to modify this approach as the OCME continues to work in a collaborative fashion with key FMS, public health partners and stakeholders. The DC OCME actively seeks opportunities to promote an open exchange of dialogue and information to optimize the District's overall comprehensive response to a VHF disease incident.

Scope

The Interim VHF ConOp shall apply to instances in which there is a confirmed or suspected Ebola/VHF-related death that falls within the jurisdiction of the DC OCME. This ConOp shall provide guidance to all OCME employees and contractors/vendors that provide services to the agency.

Planning Assumptions

The following assumptions are being made to provide some degree of structure to this concept of operations:

- The confirmed or suspected Ebola/VHF-related death(s) falls within the jurisdiction of the DC OCME.
- DC OCME will coordinate the response to a VHF-related case(s) with the DC Department of Health (DOH).
- The DC OCME will continue to experience a 'normal' or daily case load, as well as the case load from the VHF cases or mass fatality incident.
- Fatality management is primarily a local responsibility. As such, federal assistance is supplemental to local efforts.
- Federal fatality management (FM) assistance may not materialize in the timeframe or quantity required given a pandemic scenario that impacts the region or continental US.
- Depending on the nature/complexity of the event, State and Federal mortuary assistance may be unavailable.
- DC OCME staff and vendors may be impacted by a large outbreak of VHF, which would create a threat to its continuity of operations.
- Organizations typically responsible for processing human remains, such as funeral homes, crematoriums and cemeteries, will not be authorized to process the deceased in a typical fashion.
- DC OCME will take over transport of decedents with confirmed or suspected Ebola/VHF-related death for the purposes of proper disposition.
- Funeral Homes and Crematoriums contracted with the District of Columbia may refuse to honor contract across jurisdictional lines.
- Healthcare Facilities (HCFs) will be required to report VHF-related or suspected deaths daily, to facilitate the OCME's production of up-to-date information for official reporting purposes as well as resource allocation.
- The death registration process will need to be streamlined to assure that paperwork does not limit surge capacity.
- OCME forensic staff will be at higher risk of exposure and illness than the general population, placing additional strain on the agency's continuity of operations.

Interim Concept of Operations

The OCME may implement the following practices with regards to the management of in-hospital and HCF deaths related to VHFs:

Healthcare Facility Deaths:

Any confirmed or suspected Ebola/VHF-related death within the jurisdiction of the DC OCME will be taken into the jurisdiction of the DC OCME. The DC OCME will take claim of the body directly from the HCF and oversee the management of the decedent from the acquisition of the body, all the way through to the point of delivery to the location of final disposition (cremation or internment). This is to assure the safe handling of the decedent and to prevent further spread of the disease through improper handling of decedent remains.

Healthcare Facility Fatality Surge:

The concept of operations with regards to the interaction and coordination between overwhelmed HCFs and the DC OCME will be determined in conjunction with the DOH, the individual HCFs and the DC Healthcare Coalition.

Unclaimed Cases:

Unclaimed cases in the custody of the DC OCME are normally subject to public disposition after 30 days, however this standard may be altered (shortened) if the District experiences a fatality surge.

District Morgue Surge:

In the event of a fatality surge of infectious decedents that exceeds the capacity of the DC OCME to safely and properly manage, OCME may request mobile refrigerated storage through the Emergency Operations Center (EOC) at the DC Homeland Security and Emergency Management Agency (HSEMA).

Appendix A – Interim Guidance for Handling Remains of Confirmed or Suspected Ebola/VHF Deaths

Scope

This document shall provide guidance to all DC OCME employees in which there is a confirmed or suspected Ebola/VHF-related death that falls within the jurisdiction of the DC OCME. This ConOp is derived exclusively from CDC guidelines[1,2,3] which were current as of 10-23-2014, and shall apply to all DC OCME employees as indicated above.

In decedents who expire of Ebola/VHF infection, the virus can be detected on the surface of and throughout the body after death. Ebola and other VHFs can be transmitted in postmortem handling settings by laceration and puncture with contaminated instruments used during postmortem handling, through direct handling of human remains without appropriate personal protective equipment, and through splashes of blood or other body fluids (e.g. urine, saliva, feces) to unprotected mucosa (e.g., eyes, nose, or mouth) which occur during postmortem handling.

Procedure

Only DC OCME personnel trained in handling infectious human remains, and wearing PPE, should touch or move any Ebola/VHF-infected remains. The overall goal of this procedure is to assure the following:

- Handling of human remains shall be kept to a minimum.
- Autopsies on decedents who die of Ebola/VHFs shall be **avoided.** If the Chief Medical Examiner (CME) deems that an autopsy is necessary, the CDC should be consulted regarding additional precautions.
- All DC OCME personnel shall observe and comply with the safety protocols established through the supplemental training provided as well as standard operating procedures (SOPs) for infection control.

Personal Protective Equipment for OCME Personnel (General Guidelines)

- **Personal protective equipment (PPE)**: Prior to contact with a body, DC OCME personnel must wear PPE consisting of: a surgical scrub suit, surgical cap, impervious gown with full sleeve coverage, eye protection (e.g., face shield, goggles), facemask, shoe covers, and triple surgical gloves. Additional PPE (leg coverings, apron) might be required in certain situations (e.g., copious amounts of blood, vomit, feces, or other body fluids that can contaminate the environment).

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[1] Guidance for Safe Handling of Human Remains of Ebola Patients in U. S. Hospitals and Mortuaries. http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients-us-hospitals-mortuaries.html

[2] Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola. http://www.cdc.gov/media/releases/2014/fs1020-ebola-personal-protective-equipment.html

[3] Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing): http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html

- **Putting on, wearing, removing, and disposing of PPE**: PPE should be in place **BEFORE** contact with the body, worn during the process of collection and placement in body bags, and should be removed immediately after the collection process and discarded appropriately. Use caution when removing PPE as to avoid contaminating the wearer (see PPE attachment). Hand hygiene (washing hands thoroughly with soap and water or an alcohol based hand rub) shall be performed immediately following the removal of PPE. If hands are visibly soiled, use soap and water.
- For specific PPE application (donning) and removal (doffing) procedures, see Appendix B.

Postmortem Preparation

- **Preparation of the body**: At the site of death (HCF or scene), the body should be wrapped in a plastic shroud. Wrapping of the body should be done in a way that prevents contamination of the outside of the shroud. DC OCME personnel shall immediately change gown and/or gloves if they become heavily contaminated with blood or body fluids. Leave any intravenous lines or endotracheal tubes that may be present in place. Avoid washing or cleaning the body. After wrapping the body in a plastic shroud, the body should be immediately placed in a leak-proof body bag and sealed. The sealed bagged body should then be placed in another leak-proof body bag and sealed before being transported.
- **Surface decontamination of body bag**: Prior to transport to the morgue, perform surface decontamination of the body bag by removing all visible contamination on outer bag surfaces with EPA-registered disinfectants or hypochlorite solution which can kill a wide range of viruses. Once the visible contamination has been removed, reapply the disinfectant to the entire bag surface and allow to air dry.

Transportation of Infectious Human Remains

- **The following items must be considered before and during transport:**
  - Transportation of remains that contain Ebola/VHF should be minimized to the extent possible.
  - All transportation, including local transport for mortuary service storage or burial, should be coordinated through the DC OCME in advance.
  - Interstate transport should be coordinated with the receiving county/state and the CDC by calling the Emergency Operations Center at 770-488-7100.
  - The mode and route of transportation must be considered carefully by DC OCME personnel in advance of movement, taking into account distance and the most expeditious route. This function should be coordinated through the OCME Fatality Management Operations Center (FMOC).
  - Following the removal of the body, the morgue vehicle shall be cleaned and disinfected as detailed in the attached document entitled: "*Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus*".
- **Staff operating or riding in an DC OCME vehicle carrying infectious human remains:** PPE is not required for individuals driving or riding in a vehicle carrying human remains, provided that drivers or riders will not be handling the remains of a suspected or confirmed case of Ebola/VHF, and the remains are safely contained and the body bag is disinfected as described above. As such, those driving or riding in a DC OCME morgue vehicle **SHALL NOT** have any contact with decedents.

OCME Mortuary Services

- **The following must be adhered to when performing mortuary services:**
  - Do not open the body bags unless necessary to confirm identification or to perform some other essential forensic process.
    - DC OCME mortuary personnel shall wear the 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) if it the body bag must be opened to confirm identification or perform some other essential forensic process.
  - Do not remove remains from the body bags. Bagged bodies should be placed directly into either the BSL-3 or isolation cold storage units, or mobile storage unit (if available).
    - DC OCME mortuary personnel shall wear the 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 or hypochlorite solution which can kill a broad range of viruses in accordance with label instructions.

Disposition of Remains

- Unless otherwise indicated, under the guidance and direction of the DC Department of Health, remains shall be cremated.

Definitions

Cremation: The act of reducing human remains to ash by intense heat.

Leak-proof body bag: A body bag that is puncture-resistant and sealed in a manner so as to contain all contents and prevent leakage of fluids during handling, transport, or shipping.

References

1. Centers for Disease Control and Prevention. Guidance for safe handling of human remains of Ebola patients in U. S. hospitals and mortuaries. Centers for Disease Control and Prevention Web site. http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients-us-hospitals-mortuaries.html. Published October 8, 2014. Updated 2014.
2. Nolte KB, Hanzlick RL, Payne DC, et al. Medical examiners, coroners and biological terrorism, A guidebook for surveillance and case management. 2004;53(RR08).
3. World Health Organization. WHO: Ebola response roadmap update. 2014.

Appendix B–Interim Guidance for The Use of Personal Protective Equipment (PPE) When Handling Remains of Confirmed or Suspected Ebola/VHF Decedents

Scope

This document shall provide guidance to all OCME employees in which there is a confirmed or suspected Ebola/VHF-related death that falls within the jurisdiction of the DC OCME. This plan is derived exclusively from CDC guidelines[4,5,6] which were current as of 10-23-2014, and shall apply to all OCME employees as indicated above.

In patients who expire of Ebola/VHF virus infection, the virus can be detected on the surface of and throughout the body after death. Ebola and other VHFs can be transmitted in postmortem handling settings by laceration and puncture with contaminated instruments used during postmortem handling, through direct handling of human remains without appropriate personal protective equipment, and through splashes of blood or other body fluids (e.g. urine, saliva, feces) to unprotected mucosa (e.g., eyes, nose, or mouth) which occur during postmortem handling. The following procedure outlines the guidelines established by the CDC for the use of personal protective equipment (PPE) when handling the remains of confirmed or suspected Ebola/VHF decedents.

Procedure

Only OCME personnel trained in handling infectious human remains, and wearing PPE, should touch or move any confirmed or suspected Ebola/VHF-infected remains. The goal of this procedure is to assure the following:

- All OCME staff who handle human remains undergo rigorous training and are practiced and competent with PPE, including putting it (donning) on and taking it off (doffing) in a systemic manner.
- No skin exposure is permissible when PPE is worn.
- All DC OCME staff are supervised by a trained monitor who visually observes each worker putting PPE on and taking it off to help ensure compliance with procedures.
- All OCME personnel shall observe and comply with the safety protocols established through the supplemental training provided as well as standard operating procedures (SOPs) for infection control.

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[4] Guidance for Safe Handling of Human Remains of Ebola Patients in U. S. Hospitals and Mortuaries. http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients-us-hospitals-mortuaries.html

[5] Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola. http://www.cdc.gov/media/releases/2014/fs1020-ebola-personal-protective-equipment.html

[6] Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On (Donning) and Removing (Doffing): http://www.cdc.gov/vhf/ebola/hcp/procedures-for-ppe.html

The procedure describes methods for providing a standardized, high level of protection for personnel by having:

- **Recommended PPE** for the safe handling of contaminated remains.
- **Designated areas for putting on and taking off PPE** to ensure that space and layout allows for clear separation between clean and potentially contaminated areas.
- **Trained monitor/observers to monitor PPE** use and safe removal.
- **Step-by-step PPE removal instructions** that include Disinfecting visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment
- **Disinfection of gloved hands** using either an EPA-registered disinfectant wipe or alcohol-based hand sanitizer between steps of taking off PPE.

This document focuses on specific PPE OCME staff shall use and offers detailed step by step instructions for how to put the equipment on and take it off safely. OCME staff should adhere to the following CDC principles when handling confirmed or suspected Ebola/VHF-infected remains:

CDC Principle #1: Rigorous and Repeated Training
Focusing only on PPE gives a false sense of security and worker safety. Training is a critical aspect of ensuring infection control. All staff should practice numerous times to make sure they understand how to appropriately use the equipment, especially the step by step process of putting on and taking off of PPE.

CDC Principle #2: No Skin Exposure When PPE is Worn
The CDC recommends that no skin be exposed when PPE is worn. PPE recommended for U.S. healthcare workers caring for patients with Ebola includes:

- Triple gloves.
- Boot covers that are waterproof and go to at least mid-calf or leg covers.
- Single-use fluid resistant or impermeable gown that extends to at least mid-calf or coverall without integrated hood.
- Respirators, including either N95 respirators or powered air purifying respirator (PAPR).
- Single-use, full-face shield that is disposable.
- Surgical hoods to ensure complete coverage of the head and neck.
- Apron that is waterproof and covers the torso to the level of the mid-calf (and that covers the top of the boots or boot covers) should be used if decedents have visible body fluids on them.

CDC Principle #3: Trained Monitor
The CDC recommends a trained monitor actively observe and supervise each worker putting PPE on and taking it off. This is to ensure each worker follows the step by step processes, especially to disinfect visibly contaminated PPE. The trained monitor can spot and immediately address any missteps in real-time.

PPE is Only One Aspect of Infection Control

It is critical to focus on other prevention activities to halt the spread of Ebola including:

- Designated personnel to ensure proper implementation of precautions
- Limiting personnel in close proximity to the decedent
- Effective environmental cleaning

Principles and Use of PPE

DC OCME staff must understand the following basic concepts to ensure safe and effective PPE use, which include that no skin may be exposed while working in PPE:

- **Donning (Application of PPE)**
  - PPE must be donned correctly in proper order before contact with the remains and not be later modified while in the area where the decedent is. All donning activities must be directly observed by a trained observer.
  - **During Postmortem Handling**
  - PPE must remain in place and be worn correctly for the duration of exposure to potentially contaminated remains. PPE should not be adjusted during postmortem handling.
  - DC OCME staff should perform frequent disinfection of gloved hands using an alcohol-based hand rub (ABHR), particularly after handling the body of exposure to body fluids.
  - If during postmortem handling a partial or total breach in PPE (e.g., gloves separate from sleeves leaving exposed skin, a tear or puncture develops in an outer glove) occurs, the worker must move immediately to the doffing area to assess the exposure and doff if necessary.
- **Doffing (Removal of PPE)**
  - The removal of used PPE **is a high-risk process** that requires a structured procedure, a trained observer, and a designated area for removal to ensure protection.
  - PPE must be removed slowly and deliberately in the correct sequence to reduce the possibility of self-contamination or other exposure to Ebola/VHF.
  - A stepwise process should be used during training and daily practice.

Training on Correct Use of PPE

Training ensures that workers are knowledgeable and proficient in the donning and doffing of PPE prior to engaging in management of an Ebola/VHF decedent. Comfort and proficiency when donning and doffing are only achieved through repeated practice on the correct use of PPE. Workers will be required to demonstrate competency in the use of PPE, including donning and doffing while being observed by a trained observer, before working with Ebola/VHF decedents. In addition, during practice, workers and their trainers should assess their proficiency and comfort with performing required duties while wearing PPE.

Use of a Trained Observer

Because the sequence and actions involved in each donning and doffing step are critical to avoiding exposure, a trained observer will read aloud to the worker each step in the procedure checklist and visually confirm and document that the step has been completed correctly.

- The trained observer is a dedicated individual with the sole responsibility of ensuring adherence to the entire donning and doffing process.
- The trained observer will be knowledgeable about all PPE recommended in the facility's protocol and the correct donning and doffing procedures, including disposal of used PPE, and will be qualified to provide guidance and technique recommendations to the worker.
- The trained observer will monitor and document successful donning and doffing procedures, providing immediate corrective instruction if the worker is not following the recommended steps.
- The trained observer should know the exposure management plan in the event of an unintentional break in procedure.

Designating Areas for PPE Donning and Doffing

Staff should ensure that space and layout allow for clear separation between clean and potentially contaminated areas. It is critical that physical barriers be used where necessary, along with visible signage, to separate distinct areas and ensure a one-way flow of movement from clean areas (e.g., area where PPE is donned and unused equipment is stored) to the morgue or decedent's location and to the PPE removal area (area where PPE is removed and discarded).

Post signage to highlight key aspects of PPE donning and doffing, including:

- Designating clean areas vs. potentially contaminated areas.
- Reminding workers to wait for a trained observer before removing PPE.
- Reinforcing the need for slow and deliberate removal of PPE to prevent self-contamination.
- Reminding workers to perform disinfection of gloved hands in between steps of the doffing procedure, as indicated below.

Designate the following areas with appropriate signage:

1. **PPE Storage and Donning Area**
   This is an area outside the Ebola/VHF decedent's location where clean PPE is stored and where workers can don PPE before entering the decedent's location. Do not store potentially contaminated equipment, used PPE, or waste removed from the decedent's location in this area. If waste must pass through this area, it must be properly contained.
2. **PPE Removal Area**
   This is an area in proximity to the decedent's location where workers leaving the decedent's location can doff and discard their PPE. Alternatively, some steps of the PPE removal process may be performed in a clearly designated area of the decedent's location near the door, provided these steps can be seen and supervised by a trained observer. Do not use this clearly designated area within the decedent's location for any other purpose. Stock gloves in a clean section of the PPE removal area accessible to the worker while doffing.
   In the PPE removal area, provide supplies for disinfection of PPE and for performing hand hygiene and space to remove PPE, including a place for sitting that can be easily cleaned and disinfected, where the workers can remove boot covers. Provide leak-proof infectious waste containers for discarding used PPE. Perform frequent environmental cleaning and disinfection of the PPE removal area, including upon completion of doffing procedure by workers.

Selection of PPE for OCME Workers During Handling of Ebola/VHF Decedents/Remains

This section outlines several PPE combinations and how they should be correctly worn. The key to all PPE is consistent implementation through repeated training and practice. Staff will use a powered air-purifying respirator (PAPR) or an N95 or higher respirator when handling remains.

For DC OCME workers who may spend extended periods of time in PPE while handling Ebola/VHF decedents, safety and comfort are critical. Standardizing attire under PPE (e.g., surgical scrubs or disposable garments and dedicated washable footwear) facilitates the donning and doffing process and eliminates concerns of contamination of personal clothing.

Footnotes:

*EPA-registered disinfectant wipe: Use a disposable wipe impregnated with a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim of potency at least equivalent to that for a non-enveloped virus (e.g., norovirus, rotavirus, adenovirus, poliovirus).

** Note: A full face shield may not provide full face protection in the setting of significant splashing.***All facilities should have a protocol for removing their particular PAPR and preparing equipment for reprocessing (e.g., bagging for temporary storage before reprocessing, immediate reprocessing in the doffing area).