

## **AMR PPE Donning & Doffing Procedures**

Ebola is spread through direct contact (e.g., through broken skin or through mucous membranes of the eyes, nose, or mouth) with blood or body fluids of a person who is sick with Ebola or with objects (e.g., needles, syringes) that have been contaminated with the virus. For all Caregivers treating or transporting Person Under Investigation “PUI” or Known Ebola (“Known Ebola”) Patients, PPE with full body coverage will be used to reduce the risk of exposure.

AMR will use Trained Observers to monitor and ensure that correct PPE use and adherence to procedures for donning and doffing PPE are followed. The Trained Observers will follow a checklist guiding and supervising the Caregiver in every donning and doffing procedure.

### **GENERAL GUIDELINES:**

- Ensure that a Trained Observer watches closely each donning and each doffing procedure, and provides supervisory assurance that donning and doffing protocols are followed.
- Ensure that practical precautions are taken during patient care, such as keeping hands away from the face, limiting touching of surfaces and body fluids, limiting invasive procedures so as to prevent needle stick and sharps injuries, avoiding advanced airway support, such as ETI, NTI or other invasive airway skills do to potential splash or aerosolized exposures (Using BVM and suction only).
- Don PPE correctly in proper order before patient contact and avoid modifying or adjusting PPE during patient contact or while in patient compartment.
- 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 virus
- 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 virus
- Trained Observers will wear full Ebola Viral Disease (“EVD”) PPE for droplet precautions with the exception of a respirator as they will not be involved in direct patient care.
- Trained Observers may assist with donning or doffing PPE. If Trained Observer assists with PPE removal then hand hygiene practices will be utilized following removal of potentially contaminated gloves and donning of clean gloves will follow.

## Donning PPE for EVD with the PAPR Device

**Engage Trained Observer:** The donning process is conducted under the guidance and supervision of a Trained Observer, who confirms visually that all PPE is serviceable and has been donned successfully. The Trained Observer uses a written checklist to confirm each step in donning PPE and can assist with ensuring and verifying the integrity of the ensemble. No exposed skin or hair of the Caregiver should be visible at the conclusion of the donning process.

- Hydrate and Urinate:** PPE adds an additional burden to Caregivers bodies causing sweating and prevents one from using the restroom without complete doffing of the equipment. Caregivers should hydrate and urinate to prevent dehydration or the need to relieve body functions while in PPE.
- Vital Signs:** Take baseline vital signs.
- Clothing:** Comfortable clothing should be worn in PPE. Uniform pants with T-shirt are acceptable. No personal items (e.g., jewelry, watches, cell phones, pagers, pens) should be worn.
- Inspect PPE Prior to Donning:** Visually inspect the PPE ensemble to be worn to ensure that it is in serviceable condition, that all required PPE and supplies are available, and that the sizes selected are correct for the Caregiver. The Trained Observer reviews the donning sequence with the Caregiver before the Caregiver begins the donning process and reads it to the Caregiver in a step-by-step fashion.
- Perform Hand Hygiene:** Perform hand hygiene with Alcohol Based Hand Rub (“ABHR”). When using ABHR, allow hands to dry before moving to next step.
- Put on Inner Gloves:** Put on first pair of gloves.
- Put on Boot or Shoe Covers.**
- Put on Coverall:** Put on coverall. Ensure coverall is large enough to allow unrestricted freedom of movement. Ensure cuffs of inner gloves are tucked under the sleeve of the coverall
  - a. If coverall is hooded then tuck hood into suit to prevent interference with the use of the PAPR hood assembly.
  - b. If a PAPR with external belt-mounted blower is used, then the blower and tubing must be on the outside of gown *or* coverall to ensure proper airflow.
- Put on Outer Gloves:** Put on second pair of gloves (with extended cuffs). Ensure the cuffs are pulled over the sleeves of the gown *or* coverall
- Put on Respirator:**

- a. Attach PAPR motor blower to mid-back and secure with belt around waist.
  - b. Connect PAPR air hose to hood, turn on, and don the hood shroud over the suit covering the shoulders. Ensure the hood covers the neck.
- Verify:** After completing the donning process a head to toe verification of the integrity of the ensemble is performed by the Trained Observer. The Caregiver should be comfortable and able to extend the arms, bend at the waist, and go through a range of motions to ensure there is sufficient range of movement while all areas of the body remain covered. A mirror in the room can be useful for the Caregiver while donning PPE.
  - Disinfect Outer Gloves:** Disinfect outer-gloved hands with ABHR. Allow to dry prior to patient contact.

### **PAPR Safety Check**

- When air is flowing correctly into the suit, there should be an inflated pouch or poof at the head (cone head) and no fogging of face piece (initial fogging may be normal depending on weather and humidity issues but should resolve once air is flowing usually within a minute or so). Continued fogging in the face piece needs to be addressed and checked for malfunction or misfit of apparatus.
- Fogging of face piece indicates potential malfunction of the PAPR motor (loss of battery power) and should be addressed immediately
- Once air is flowing the suit should expand out a little by the creation of an air cushion around the wearer. This is normal and desirable as this cushion of air may provide a couple minutes of air for the wearer if a malfunction may occur.
- Ensure the breathing tube stays to the rear of the wearer- a tube which is allowed to move forward may be caught and dislodged/pulled out by accident resulting in loss of integrity to the suit and potential exposure to a contaminant.
- Loose ends of the belt or other loose or hanging items should be avoided and checked for during donning. These may become hazards to catching on something and causing falls or break in the integrity of the suit.

### **Doffing PPE for EVD with the PAPR Device:**

**Engage Trained Observer:** Prior to doffing PPE, the Trained Observer must remind the Caregiver to avoid reflexive actions that may put them at risk, such as touching their face. Explain this instruction and repeating it as a reminder during doffing. Although the Trained Observer should minimize touching the Caregiver or the Caregiver's PPE during the doffing process, the Trained Observer or a second Caregiver #2 in proper PPE may assist with removal of specific components of PPE, as outlined below. The Trained Observer or Caregiver #2 disinfects the outer-gloved hands immediately after handling any Caregiver PPE, disposes of them and dons clean set of gloves.

- Inspect:** Trained Observer inspects the PPE to assess for visible contamination, cuts, or tears before starting to remove. If any PPE is potentially contaminated, then disinfect using an \*EPA-registered disinfectant wipe, remove and dispose of gloves.
  - a. **Don Clean Gloves:** Trained Observer puts on clean set of gloves if disinfection and glove removal occurred.
- Disinfect Outer Gloves:** Disinfect outer-gloved hands with either an \*EPA-registered disinfectant wipe or (ABHR), and allow drying.
- Remove Boot or Shoe Covers:** If coverall without integrated feet was used then while sitting down, remove and discard boot covers otherwise wait till boot cover removal after coverall below.
- Disinfect and Remove Outer Gloves:** Disinfect outer-gloved hands with either an \*EPA-registered disinfectant wipe or ABHR. Remove and discard outer gloves, taking care not to contaminate inner glove during removal process.
- Inspect and Disinfect Inner Gloves:** Inspect the inner gloves' outer surfaces for visible contamination, cuts, or tears. If an inner glove is visibly soiled, cut, or torn, then disinfect the glove with either an \*EPA-registered disinfectant wipe or ABHR. Then remove the inner gloves, perform hand hygiene with ABHR on bare hands, and don a clean pair of gloves. If no visible contamination, cuts, or tears are identified on the inner gloves, then disinfect the inner-gloved hands with either an \*EPA-registered disinfectant wipe or ABHR.
- Remove Respirator (PAPR):**
  - a. If a PAPR with an external belt-mounted blower unit is used, then all components must be removed at this step.
    - i. Remove and discard hood.
    - ii. Disinfect inner gloves with either an \*EPA-registered disinfectant wipe or ABHR.
    - iii. Remove headpiece, blower, tubing, and the belt and battery unit. This step might require assistance from the Trained Observer.
    - iv. Disinfect inner gloves with either an \*EPA-registered disinfectant wipe or ABHR.
    - v. Place all reusable PAPR components in an area or container designated for the collection of PAPR components for disinfection.
- Remove Coverall:** Remove and discard.
  - a. Caregiver #1 removes outer set of gloves.

- b. To remove coverall Trained Observer or Caregiver #2 unzips coverall completely since Caregiver cannot see zipper under neck. Trained Observer/Caregiver #2 removes Caregiver #1's suit by unzipping and then standing behind Caregiver #1 rolls suit off in an inside out fashion including the arms and in a peeling fashion continuing to the waste.
    - i. Avoid contact of inner clothing or skin with outer surface of coverall or gloves during removal.
  - c. Caregiver #1 finishes removing coverall avoiding contact of inner clothing or skin with outer surface of coverall or gloves during removal while only touching the inside of the coverall. (Sitting on a clean surface, such as an upside down 5 gallon bucket or chair will assist Caregiver #1 in removal of the leg portion while reducing the risk of falling.)
- Trained Observer's Gloves:**
- a. Disinfect gloves with \*EPA-registered disinfectant wipe or ABHR.
  - b. Dispose of gloves and replace with clean set of gloves.
- Caregiver Disinfects Inner Gloves:** Disinfect inner gloves with either an \*EPA-registered disinfectant wipe or ABHR
- Remove Boot Covers:** Sitting on a new clean surface (e.g., second clean chair, clean side of a bench, 5 gallon bucket) Caregiver removes boot covers.
- Disinfect Shoes:** use an \*EPA-registered disinfectant wipe to wipe down every external surface of the washable shoes.
- Disinfect Inner Gloves:** Disinfect inner gloves with either an \*EPA-registered disinfectant wipe or ABHR and dispose of inner gloves.
- Perform Hand Hygiene:** Perform hand hygiene with ABHR.
- Inspect:** Perform a final inspection of Caregiver for any indication of contamination of the disposable garments. If contamination is identified, immediately inform Designated Officer or Safety & Risk Manager or their designee for direction.
- Vital Signs:** Take vital signs within 5 minutes of completion of doffing procedures. Address any medical issues, such as moderate to severe dehydration etc. according to local clinical protocols.
- Hydrate:** PPE causes additional workload on the body and exacerbates heat generation and sweating. Replace fluids lost with water, electrolyte drinks, such as Gatorade.
- Shower:** Showers are recommended at the end of Ebola patient transports for Caregivers.

## Donning PPE for EVD with N95/P100 Disposable Filtering Face Piece Respirators

**Engage Trained Observer:** The donning process is conducted under the guidance and supervision of a Trained Observer, who confirms visually that all PPE is serviceable and has been donned successfully. The Trained Observer uses a written checklist to confirm each step in donning PPE and can assist with ensuring and verifying the integrity of the ensemble. No exposed skin or hair of the Caregiver should be visible at the conclusion of the donning process.

- Hydrate and Urinate:** PPE adds an additional burden to Caregivers bodies causing sweating and prevents one from using the restroom without complete doffing of the equipment. Caregivers should hydrate and urinate to prevent dehydration or the need to relieve body functions while in PPE.
- Vital Signs:** Take baseline vital signs.
- Clothing:** Comfortable clothing should be worn in PPE. Uniform pants with T-shirt are acceptable. No personal items (e.g., jewelry, watches, cell phones, pagers, pens) should be worn.
- Inspect PPE Prior to Donning:** Visually inspect the PPE ensemble to be worn to ensure that it is in serviceable condition, that all required PPE and supplies are available, and that the sizes selected are correct for the Caregiver. The Trained Observer reviews the donning sequence with the Caregiver before the Caregiver begins the donning process and reads it to the Caregiver in a step-by-step fashion.
- Perform Hand Hygiene:** Perform hand hygiene with ABHR. When using ABHR, allow hands to dry before moving to next step.
- Put on Inner Gloves:** Put on first pair of gloves.
- Put on Boot or Shoe Covers.**
- Put on Coverall:** Put on coverall leaving hood off. Ensure coverall is large enough to allow unrestricted freedom of movement. Ensure cuffs of inner gloves are tucked under the sleeve of the coverall.
- Put on N95/P100 Respirator:** Put on N95/P100 respirator. Complete a user seal check.
- Put on Coverall Hood or Bonnet:** Put on coverall hood or bonnet if coverall does not have a hood.
- Put on Outer Gloves:** Put on second pair of gloves (with extended cuffs). Ensure the cuffs are pulled over the sleeves of the coverall.
- Put on Face Shield:** Put on full face shield over the N95/P100 respirator and surgical hood to provide additional protection to the front and sides of the face, including skin and eyes.

- Verify:** After completing the donning process, the integrity of the ensemble is verified by the Trained Observer. The Caregiver should be comfortable and able to extend the arms, bend at the waist and go through a range of motions to ensure there is sufficient range of movement while all areas of the body remain covered. A mirror in the room can be useful for the healthcare worker while donning PPE.
- Disinfect Outer Gloves:** Disinfect outer-gloved hands with ABHR. Allow to dry prior to patient contact.

### **Doffing PPE for EVD with N95/P100 Disposable Filtering Face Piece Respirators**

**Engage Trained Observer:** Prior to doffing PPE, the Trained Observer must remind the Caregiver to avoid reflexive actions that may put them at risk, such as touching their face. Explain this instruction and repeating it as a reminder during doffing. Although the Trained Observer should minimize touching the Caregiver or the Caregiver's PPE during the doffing process, the Trained Observer may assist with removal of specific components of PPE, as outlined below. The Trained Observer disinfects the outer-gloved hands immediately after handling any Caregiver PPE and dons clean set of gloves.

- Inspect:** Trained Observer inspects the PPE to assess for visible contamination, cuts, or tears before starting to remove. If any PPE is potentially contaminated, then disinfect using an \*EPA-registered disinfectant wipe, remove and dispose of gloves.
  - a. **Don Clean Gloves:** Trained Observer puts on clean set of gloves if disinfection and glove removal occurred.
- Disinfect Outer Gloves:** Disinfect outer-gloved hands with either an \*EPA-registered disinfectant wipe or Alcohol Based Hand Rub (ABHR), and allow drying.
- Remove Boot or Shoe Covers:** If coverall without integrated feet was used then while sitting down, remove and discard boot covers otherwise wait till boot cover removal after coverall below.
- Disinfect and Remove Outer Gloves:** Disinfect outer-gloved hands with either an \*EPA-registered disinfectant wipe or ABHR. Remove and discard outer gloves taking care not to contaminate inner gloves during removal process.
- Inspect and Disinfect Inner Gloves:** Inspect the inner gloves' outer surfaces for visible contamination, cuts, or tears. If an inner glove is visibly soiled, cut, or torn, then disinfect the glove with either an \*EPA-registered disinfectant wipe or ABHR. Then remove the inner gloves, perform hand hygiene with ABHR on bare hands, and don a clean pair of gloves. If no visible contamination, cuts, or tears are identified on the inner gloves, then disinfect the inner-gloved hands with either an \*EPA-registered disinfectant wipe or ABHR.

- Remove Face Shield:** Remove the full face shield by tilting the head slightly forward, grabbing the rear strap and pulling it over the head, gently allowing the face shield to fall forward and discard. Avoid touching the front surface of the face shield.
- Disinfect Inner Gloves:** Disinfect inner gloves with either an \*EPA-registered disinfectant wipe or ABHR.
- Remove Coverall:** Remove and discard.
  - a. Caregiver #1 removes outer set of gloves.
  - b. To remove coverall Trained Observer or Caregiver #2 unzips coverall completely since Caregiver cannot see zipper under neck. Trained Observer/Caregiver #2 removes Caregiver #1's suit by unzipping and then standing behind Caregiver #1 rolls suit off in an inside out fashion including the arms and in a peeling fashion continuing to the waste.
    - i. Avoid contact of inner clothing or skin with outer surface of coverall or gloves during removal.
  - c. Caregiver #1 finishes removing coverall avoiding contact of inner clothing or skin with outer surface of coverall or gloves during removal while only touching the inside of the coverall. (Sitting on a clean surface, such as an upside down 5 gallon bucket or chair will assist Caregiver #1 in removal of the leg portion while reducing the risk of falling.)
- Trained Observer's Gloves:**
  - a. Disinfect gloves with \*EPA-registered disinfectant wipe or ABHR.
  - b. Dispose of gloves and replace with clean set of gloves.
- Disinfect and Change Inner Gloves:** Disinfect inner gloves with either an \*EPA-registered disinfectant wipe or ABHR. Remove and discard gloves taking care not to contaminate bare hands during removal process. Perform hand hygiene with ABHR. Don a new pair of inner gloves.
- Remove N95/P100 Respirator:** Remove the N95/P100 respirator by tilting the head slightly forward, grasping first the bottom tie or elastic strap, then the top tie or elastic strap, and remove without touching the front of the N95/P100 respirator. Discard N95/P100 respirator.
- Disinfect Inner Gloves:** Disinfect inner gloves with either an \*EPA-registered disinfectant wipe or ABHR
- Disinfect Washable Shoes:** Sitting on a new clean surface (e.g., second clean chair, clean side of a bench) use an \*EPA-registered disinfectant wipe to wipe down every external surface of the washable shoes.

- Disinfect and Remove Inner Gloves:** Disinfect inner-gloved hands with either an \*EPA-registered disinfectant wipe or ABHR. Remove and discard gloves taking care not to contaminate bare hands during removal process.
- Perform Hand Hygiene:** Perform hand hygiene with ABHR.
- Inspect:** Perform a final inspection of Caregiver for any indication of contamination of the disposable garments. If contamination is identified, immediately inform Designated Officer or Safety & Risk Manager or their designee for direction.
- Vital Signs:** Take vital signs within 5 minutes of completion of doffing procedures. Address any medical issues, such as moderate to severe dehydration etc. according to local clinical protocols.
- Hydrate:** PPE causes additional workload on the body and exacerbates heat generation and sweating. Replace fluids lost with water, electrolyte drinks, such as Gatorade.
- Shower:** Showers are recommended at the end of Ebola patient transports for Caregivers.